

Lansing, Kas
Muscatine M.
Davenport

St. Joseph, Mo.¹⁹⁰³
W.S.W. Iowa City.

Iowa City
~~DOCUMENT~~
~~RECORDED~~ 1904
NOTES

Aug. - Nov. 1903?

across Missouri
El Paso
Alpine

M

B. Shinnick
Iowa City
Iowa

290

8-1

Trip to El Paso, etc.

Left Iowa City at 6:37 PM,

Wednesday, Aug. 26-1903.

Went to Cedar Rapids, & there
attended meeting of Council of
Higher Education.

Aug. 27. Thurs.

Left Cedar Rapids at
3:15 AM, crossed Columbia I. ^{at 2:15}

Left Columbus I. at 7:20 AM

Rained all night & much of
day.

The drifts to about in
Ia. - could see yellow tan
with polar (whitish) posts.

(which also appears in some places
& Wayne co. in Ia.) - are the
same? In places near Sioux, the
^(at) drift comes up to surface, - base
is thin.

The topography from
Linville to Sioux is typical
Kansan - rolling

Below Abon, near Grand river a cut shows rock, limestone capped with thin shale coming almost to surface - almost no drift & no loess.

(Between Abon & Condon down very flat prairie - rest rolling - Kansan) After crossing Grand river (Benton) showed red great-like drift, -

(Cordilleran section is a word which I so term of W. Mo. takes from one of whole fields)

Beyond Newton yellow loess-like drift with few if small gravel, & very little if any loess.

Sophorophy 1 off the river valley" - rolling - Kansan,

Beyond Altwood and until is reached the country is not very rolling, gentler than is the rule with the Kansan. Exposures show a thin loess & yellow loess-like drift with small pebbles. At Concord there is, under the upper yellow loess a whitish layer - loess also. The first country extends to within a couple of miles up of first station below Latrobe (Keary). The hills then gradually appear but it is not for some time that we consider real hills. That drift? (yellow) may be something else. This whole region doesn't look like Kansas at all.

Aug. 28 - Fri.

We left Kansas City
at 11 P.M. last night, and
arrived at Dodge, Kas.
at about 6²⁵. A.M., - the
train being due at 7.37 A.M.
The country a great
open plain, but farms
looking well, gave here &
there - mostly small
Cottonwood, box elder, some
willow & some fruit trees -
mostly apples - fair enough.
Central Kansas.

At McPherson - fairly good
jungle (top), with medium sized
tree, San Alvarado, box
elder, Maple, box elder - Cotton-
wood.

Between Medora and
Hutchinson are sand dunes,
now still bare & shifting -
especially on the side of R.R.
They are reported, & I think

sand dunes.

Hutchinson, a city of over 30,000
shows remains above trees. The
Boys' Reform School located here
has a nice young park started.
The Arkansas river is like
the Platte on a smaller scale.
The banks are low, - with bluffs
as the stream is broken up
into channels between sandbars.
The sand hills N.E. are probably
from wind.

Between Partridge & Lakin
there were few shallow cuts
& these show same reddish
gravelly material that was
seen below in Turner.

Wherever a pool or swamp
was seen in the dry
plain Cat tails, reeds, &
aquatic plants generally, appear.
Involonts some of the corn
looks pretty well, but many
Hutchinson a deal of it

was stunted, & twisted.
Just beyond Greenby
appeared dune-like
hills N.E. from Rob., -
but covered with vegetation
all through the dry
soil in the plants are
small & vegetation is
much less plentiful.

Near Ashland we crossed
the Cimarron river, a small
stream with bars. There
are sand banks on W. side
especially, & the country is
desert like, with sage brush, green
manysticks, etc. - the white
deposit is prominent.
The sand bars are partly
covered with vegetation, mostly
few jack rabbits & prairie dogs
in many places.
The country near the river,

both sides, is rougher for
some distance, but sand dunes
are noticeable on W. side.

Mirages appeared most of
the day.

Passed Optima across
W. fork of Canadian. Country
again rougher, & somewhat
dune-like, or butte-like on
W. side. Desert.

Valley green. Plain gray.
Beyond Salina Tex
seen thru antelope.
At Sand Springs
and from there on very
numerous sand hills & ridges.
Partly covered with vegetation
& partly shifting & showing
wind ripples. Some are
sharp. The vegetation is
everywhere broken.

We crossed the Canadian
a little beyond Logon.
The river has a very narrow

deep gorge, cut in rock.
The water appears only
in narrow channels, I a
small plateau, - the bed
of valley being sand.
Sandbars extend from
bluff to bluff with little
interruption.

Aug. 29 Sat.
Awakened at Temporal.
From there on we travel
through desert - sagebrush, sand,
some yucca, etc.
Mountain low to end of a
rather new, - to west higher
range, - distant -
Occasionally a shack or
even house & windmill &
then a few small trees, etc.
At Julianosa there is a
short row of Lombardy poplars.
At Alamogordo there is a nice
park, blue grass, clover, etc.,
trees mostly cottonwood, - some
Lombardies - a river by there
is some corn - other scanty, but
what there is looks well.
Curious - on the east side
of track a nice fresh looking
park & a thriving town, & on west
side a sage-brush covered desert
of which I took two pictures - 13 & 14.

12

Vegetation varies. Below Alamogordo there are places where yuccas come in thick, - again sage-brush, etc.

Mesquits are very Alamogordo. All around Escobida is a great African forest, with sage brush, a few mesquits, a bunch grass, etc. Numerous large hawks fly over plain.

Spent an hour at Juarez in Mexico and in afternoon went up toward the Smelters where there are desert conditions. The Rio Grande has a current here, & below may be crossed dry shot.

At 8 P.M. took So. Pacific for Alpine, which we reached at 5¹⁰ next morning.

13

Aug. 30 - Sunday.
Stayed at Fremont's hotel,

Drove in forenoon to mts. So.

& collected many plants.

In afternoon repeated the drive with renewed success.

Left at 10.¹⁸ PM & reached El Paso at 7 A.M. ~~Aug. 31. Mon.~~

at a town at the New Commercial for changing train, etc. Sent one basket home, changed dried, and plants in press.

Left at 8:00 AM. for Alamogordo which we reached at about 10.³⁵ PM. Put up at Alamogordo Hotel, - room 25.

14

Sep. 1 - Tuesday
Changed dinner & P.M. went
out over desert eastward
to foot of mountains, —
about 4 miles away.

Collected a lot of plants,
Yucca, cactus, ferns, etc.,
In evening, pressed plants.

Sep. 2 - Wednesday.
Changed dinner early.
We left at 8:30 AM, for
Cloudcroft, a delightful
ride through splendid
mountain scenery. Prof. Mabb
pronounces it finest in
America.

Reached Cloudcroft at
about noon — delayed.

Paid up at Virginia Hotel, —
1.50 per day. Only hotel
now open. The Cloudcroft
Lodge, — the swell place,

15

was already closed.
The "season" is from
June 1 to Sep. 1,
Collector plants A.M. Also
mails.

Sep. 3 - Thursday
Philip and I walked down
the R.R. canon to Higholls.
I collected many plants, —
Yucca, etc.
Reached Alamogordo at
8:30 PM, — about 2 hrs. late.
Put plants away.

Sep. 4 - Friday
Pressed plants, etc. early.
Toward evening went out to
mt. east. Some yucca, etc.

Sep. 5 - Saturday

Packed early.

Went to Higholls & walked down Bear Creek. A long, picturesquie region.

Had fair success with plants & made a walk into Alamogordo.

Packed & left at about 1 am for the north. Prof. Rock's & Phlly were in Desert all day & were on train.

The Alamogordo Hotel is managed by Mr. Arnold, a Milwaukee whom daughter has his sister who is sister-in-law to J. C. Kanzel of Milwaukee.

Sep. 6 - Sunday

Arrived at camp of station below Santa Rosa.

The upper part of the desert is now tree-covered, mostly cedar & some piñon. It extends to a little beyond

Santa Rosa. Northward the desert is grass-covered & is like the great plains. Beyond Santa Rosa are mesas, - no real mountain. There is some of red rock to S.E. - separates out.

Saw the big marmots or fox north as N. of Golden, Colo.

Sep. 7 1903

From Zopilca to Lomas by the RR. road along E. side of Kango river. There are bluffs on the N. side with loess - at Haman ^{city} the whole Mts. valley was filled with a fine dust. The wind was only moderate & nearly one could see no dust in the air but at a little distance everything was hazy, & finally disappeared in a cloud.

On the south side of the Mission river an sand bar with slight sandstone terraces, where vegetation holds.

The Lomas is also a sand-bar stream, but near Totogba not so bad as often.

20

Nov. 18. Hack	.25
Breakfast. Columbus St.	.50
Nov. 18 meals 50 + 70	1.20
Nov. 19 meals 50 + 50. + 55	<u>1.55</u>
Sleeper to Alamoindo	2.50
Nov. 20. Breakfast at Santa Rosa	.50
Lunch ³⁵ Pin, Cap ⁵ shoes ⁴⁰ ¹⁰ ²⁵ ¹⁰ ⁹⁵ ¹⁰ ²⁵	
Nov. 21. Lunch, 50 Wine ⁵	
Nov. 22 Breakfast & lunch ^{1.00} Paper ^{.05}	
Nov. 23. Breakfast & lunch ^{.65}	
Nov. 24 Hotel ^{6.00}	
Electro. Plates ^{.55} , lunch ^{.30} Car fare ^{.10} ^{.50} Harvard,	
Cards ^{.25} , stamps ^{.15} , shoes ^{.30} ^{.20} Parcels	
Lunch ^{.50} paper ^{.5} Sodas ^{.35}	
McPherson - Hotel ^{1.00} lunch ^{.25}	
Salina - paper ^{.5} dinner ^{.25}	
Kansas City - lunch ^{.30} car ^{.5}	
Car to Lawrence ^{.40} to Leavenworth ^{.25}	
Fare to St. Jo, ^{1.00}	
Fare to Des Moines ^{4.75}	
Rent & board ^{1.00}	
Lunch ^{.20} paper's, check bag ^{.10} ^{.30}	
Borrowed 1/2 from Brewster, + .00	
Debt with St. Jo ^{.00}	

Nov., 1903

Left home Wednesday day
at 1.48 am. (or rather about
2²⁰), Nov. 18 - 1903
Waited at West Liberty
until 8³⁰ am and at
Columbus Ia. until 10³⁰ AM.
Round trip to El Paso \$31.50.
The Kansas City & El Paso train
consists of 13 coaches and
was very slow.

Left Kansas City about
3 Am. Nov. 19., & left
Leavenworth. At Bucklin,
Kas. the train was divided,
the engine being sent through,
and the rest of train forming the
local. We should have
left Bucklin at 10.³⁰ A.M.,
but really left at 5.30⁺⁵ P.M.
7 hrs. and 08^{15 min.} minutes behind
time.

The train was loaded with tourists
and the small villages were abundantly
traversed by invalids.

22

We were also delayed by a freight which.

We were due at Meade at 11:55 AM. but left there at 7:32 PM., or 7 hrs. and 37 minutes behind time.

Due at Arteson at 1 PM., reached it at 8:50 PM. ($7\frac{3}{4}$ hrs. late). Engine broke down at night. Result: left Santa Rosa at 8:48 AM. instead of 11:20 PM., last night, - just 9 hrs. + 8 min. late! And the two sections are again joined! This is the "saving" of 3 w 4 hrs. time! Was there ever such a sill?

23

24
25

Saw Nut Pine in rather rough valley region below Pintado. Also Red Cedar, shrubby oaks, cholla, very strong Opuntia etc. The cholla look dull & dead, but have fruit. Closer inspection shows them to be green, but dull. Left Mariano at 11:06 AM. 9 hrs. & 46 min. behind.

Near Mariano there is a lot of Red Cedar with considerable nut pine. At Grinchera 9 hrs. 46 min. late as Torreón 9:11 47 .. Below Torreón a lot of red cedar & nut pine - in narrow part of valley. The slopes are also arid.

I should say this was about same horizon as above High Rolls to Wooten. The cedars are covered with mistletoe.

24

The highest point is Corona
6666 ft above the sea. ^{to be added}
Alamogordo = 4312 ft.
El Paso - 3700 ft.
at Corona 9 hrs. 48 min later &
at Gallinas 18 hrs. 3 min. "
at Tucumcari 10⁴ 7 " "
at Anchors 10⁴ 3 " "
at Coyote 9⁴ 54 " "
at Carrizozo 9⁴ 45 " "
at Oscura 9⁴ 35 " "
^{to end of line; as train is now due}
at Alamogordo at 4:30 A.M.
El Paso 6:55 P.M.

Reached Alamogordo at 3³⁰ P.M.

Put up at Alamogordo Hotel.

Saw Mr. Banner & Mr.
E. J. Dedman of the R.R. sent
transportation to Crawford &
arranged with Mr. Banner's
brother to go out two days.

Saturday Nov. 21 train from N., was 20 hrs. late

Sunday " 22 " " " 4.45 " "

Monday " 23 " " " 1 " "

25

Nov. 21 Saturday

The streets of Alamogordo are lined with cottonwoods 5 to 6 in
in diam. & 15 to 25 ft. high.
They are planted along the
irrigating ditch which I
run down on both sides of
each street.

The leaves of the cottonwood have
nearly all turned yellow but
most of them are still on the
trees.

White sand on sandstone
formation rocky & the surface
is rippled everywhere.

Took a number of pictures on my
plate when in view of yucca
(narrow leaf - see fruit & leaves.) &
another picture of yellow composite
shrub - on which I also found
yucca (Pryenos?) white sand
the most common large plants are
the narrow leaf yucca (see fruit &
leaves.), the yellow composite shrub

(See fruit & Press.) a gray
size bush the winter
Chenopodiaceous shrub, Ethelton &
in more protected places the
Yucca grows, & other
small plants (few).

Grazed roads of numerous
Yucca, especially long, for
25 ft. No end.

Was told that a white rattlesnake had been
found on the white sand. - Albino -
the sands are shifting eastward.

Winds are not very heavy, at least
strong winds are not frequent.
Sheds of people around & buried
in the white sand are occasionally
uncovered by the wind.

Some very light house traps have
also been found there. ~~etc.~~

The driver, Mr. Eugene De Mier, Mr.
R. B. Bowens brother has been in the
territory 18 yrs. & is full of plain facts.

Met Judge Baker at hotel.
Wanted to be remembered to Prof.
Carriker, also Swisher, Mrs. Rainey

Nov. 22. ^{Sunday} From E. to mountain.

Took pictures etc. The fine-
leaved (dark) tree-like shrub
with thin & short shield-shaped
& little berries ^{red waxy} in some
dense groves with very large
Ostrya which struck me as
new. (See wood, berries & broad
spec. of shrub)

Saw a Pairsus shuckleyi under
brush up the Canon.

Went up Adams Canon about
three miles. Collected a willow (?)
oak, etc. etc.

Returned about 4:30 P.M. Parker +
wrote letters.

Found cover of *Pinus ponderosa* ^{and pine}
& *Abies longiloba* that has been
washed down the mountain, and the
fir tops showed no signs of health.

Nov. 23-Monday. Got up early & packed. Left for Cloudcroft at 8.³⁰ A.M.

Arrived at Cloudcroft at 12.³⁰. Took pictures on way, & at Cloudcroft.

1. The large central tree in open -
is *abies concolor*.

The very large tree only partly in -
is *Abies concolor*. The
smaller one beside it is
Pinus ponderosa.

One with home is *Pinus ponderosa*
(several).

The fine forest is *Pinus ponderosa* &
abies concolor. ^{some white pine} *Abies concolor* with
Bark with cracks far
apart in *Pinus ponderosa*

Another bark = wh Pine

Very large blunt-tipped tree beyond
RR cut a *abies concolor*

Peculiar tree - water tank - *abies concolor*
Very rough bark - trunk wilting
below = *abies concolor*

Those with trunk are certainly
abies concolor.

No. 1 is *abies concolor*?
The bark of *A. concolor* is not so rough.

Mr. Delmar is one of the
Cloudcroft residents. The
others are:

A. J. King, E. M. Hartner -
W. H. Long, J. A. Eddy.

The pictures on way up were taken
between High Rolls & Wagon. They
were mostly snapshots. The others
are *Pinus* (*Pinon*), *Juniperus* ~~polyphylla~~
& *Juniperus* (*virginiana*?). - The water
tank & engine & train (log cars) were
taken at Wagon.

I found *Helix* most common under
fallen granitic esp., of which there
is a lot growing just below Cloudcroft.
The log train came in at 3.⁴⁵. The
logs were all *Pinus ponderosa*.

Train left Cloudcroft at 4 P.M.

At Barrie's Camp the mountain sides are almost bare, but stumps show that much timber was cut.

In some places above fire destroyed much.

Reached Alamogordo at 6⁴⁵ AM., delayed a little by a derailed locomotive on our train. The day was beautiful (clouds shown) ^(to our advantage as the leaves were dead.)

Nov. 24. Left Alamogordo at 6⁴⁵ AM. 2¹⁵ hrs. late.

Reached El Paso at 9 AM.

Took pictures at the Franklin & across at the Stanton & the bridge. View down Stanton dr. & Franklin Mt.

Left El Paso Nov. 24 at 6:55 PM. in 1903.

Reached Santa Rosa at 6²² AM, Nov. 25 - 1903.

This was mountain time. Left Santa Rosa at 7³⁵ AM. Actual time

Nov. 25 Wednesday.

Reached Meflerson, Kas., a little after midnight - about 1 AM.

Nov. 26

Took W.R. train for Salina at 8:30 am. Reached Salina about 10 AM.

Left for Wilson at 5:30 PM, train 50 min. late.

Reached Wilson, Kas. on main line of U.P., at 8 PM.

H. Joseph, No. Nov. 28-1903

I. Experimental just above Franklin in
C. B. & Q. depot is at the end
of a ridge lower than the
high bluffs back from river.
It shows the hard, somewhat gritty,
light yellow color characteristic
of the loess, though there are
sandules are plentiful, some
rounded, some following roots &
slender, & some in lines &
spurts. One of these sets of
bands follows what
appears to be a surface
bedding of probably

lime nodules from him.
Iron tubules are rather few &
nearly all vertical.
The nodules & shells were taken
in a bank extending vertically
12 ft. above the river which is here about
18 or 20 ft. above the river.

shells marked no ke

Shells & nodules extend up as high
as I can see.

Few are found down down & a
good many are crushed as if they
had been slipping.

(The great sandbars opposite
show evidence of drifting about)
Wind is moderate.

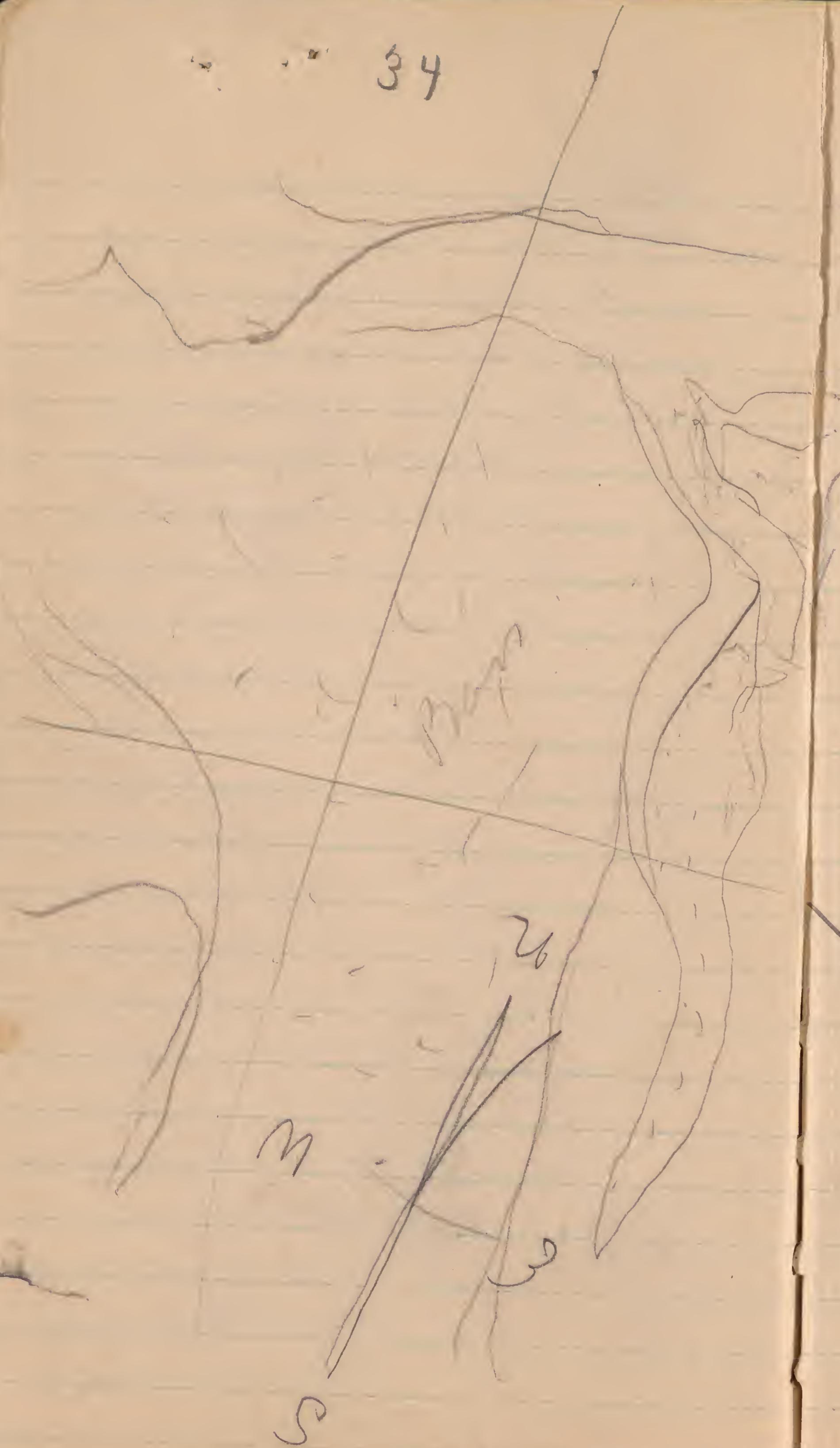
In one place where a face (slipping)
parallel to face of bank scales off
lime plates extend up & down
parallel with face in what was an
old crevice.

Farther N. the bank becomes
18-20 ft. high & a sort of
steepish slope has run
up so that I get a marked
box of shells (tin) about 12
ft. above R.R. There are plenty
of nodules in this part
out. I

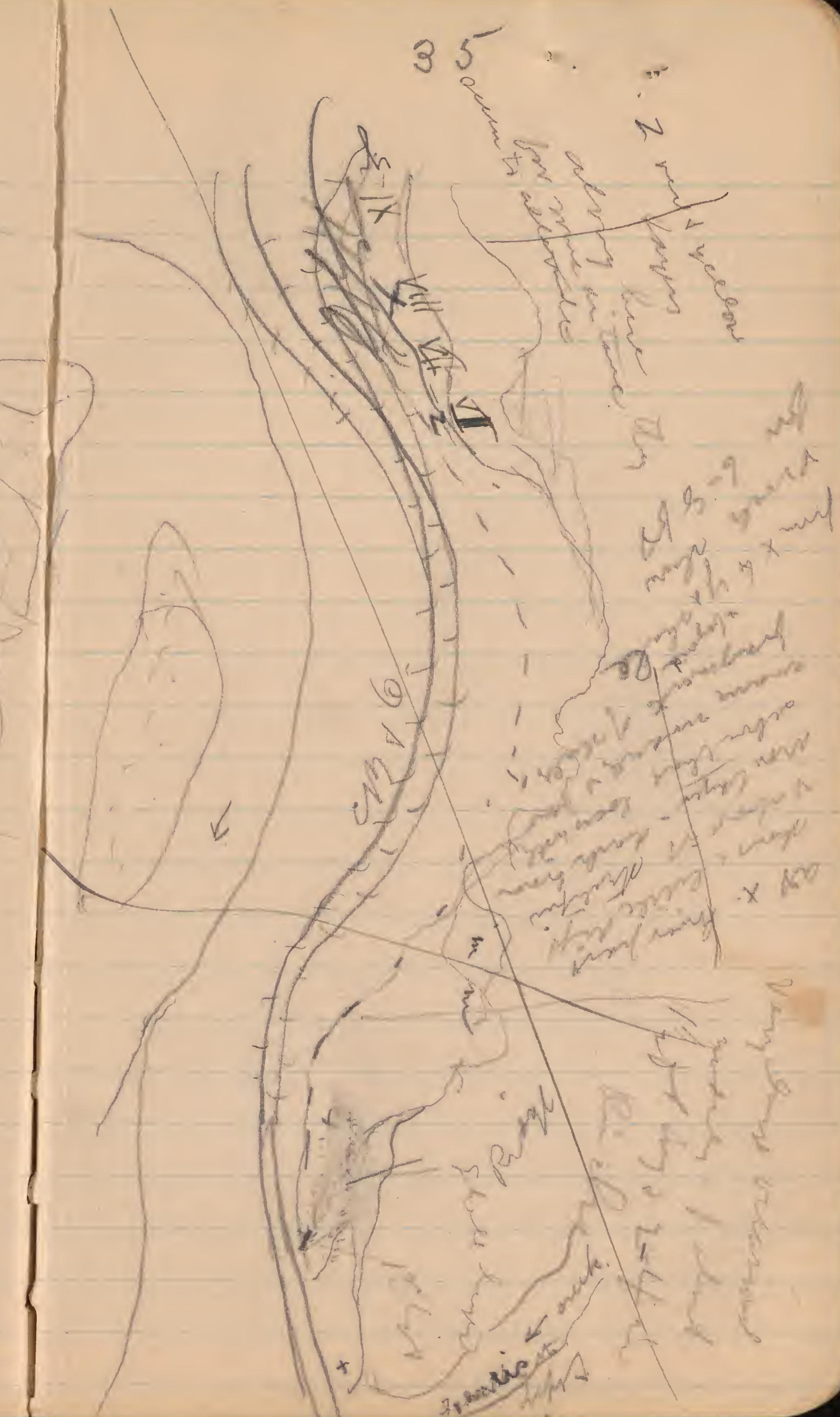
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1st fall
R.R. k.

34



30



1. 2 very recent
along a river
at middle
of slope

50 cm

100 cm

150 cm

200 cm

250 cm

300 cm

350 cm

400 cm

450 cm

500 cm

550 cm

600 cm

650 cm

700 cm

750 cm

800 cm

850 cm

900 cm

950 cm

1000 cm

1050 cm

1100 cm

1150 cm

1200 cm

1250 cm

1300 cm

1350 cm

1400 cm

1450 cm

1500 cm

1550 cm

1600 cm

1650 cm

1700 cm

1750 cm

1800 cm

1850 cm

1900 cm

1950 cm

2000 cm

2050 cm

2100 cm

2150 cm

2200 cm

2250 cm

2300 cm

2350 cm

2400 cm

2450 cm

2500 cm

2550 cm

2600 cm

2650 cm

2700 cm

2750 cm

2800 cm

2850 cm

2900 cm

2950 cm

3000 cm

3050 cm

3100 cm

3150 cm

3200 cm

3250 cm

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3350 cm

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9300 cm

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9400 cm

9450 cm

9500 cm

9550 cm

9600 cm

9650 cm

9700 cm

9750 cm

9800 cm

9850 cm

9900 cm

9950 cm

10000 cm

10050 cm

10100 cm

</

In places, especially at y,
the loess looks quite red
but just west to it, on west
ridge & bank, loess is yellow.
Probably 25-35 ft deep on
these bluffs.

The other part is vertical,
with talus below a usually.
The other part also shows
that crumbly "gravel"
structure pretty generally,
With plants very abundant
everywhere.

Soil seems to be red.

One place here is yet a
rock, - appearing at y,
but now it is a large
small boulders (few) mostly
dark (brown)

One dark reddish boulder
(not very fractured?) measures
over 4 ft in diam.

VII.

In a bluff about the rd
& yellow loess covers the surface.



The line is quite sharp.
The lower soil, contains some
irregular linear nodules & the
yellow some rounded nodules &
a few fossils.

See samples of clay
Red + Yellow

See shells from yellow.

The fossils from the yellow
layer were taken at a point
about 15 to 16 ft. above RR
track.

Lower portion of the bluff shows
very red loess, others are
yellow & more rounded.

T.

Below 2 on the cliff form
reddish brown mudstone &
layer of large nodules,
then a fine, yellowish
loam.

<u>surface</u>	
00 00 20	yellowish
moder 0	moder 0
reddish	00 00

base - top
of talus

The difference is not so
marked as in preceding
cases.

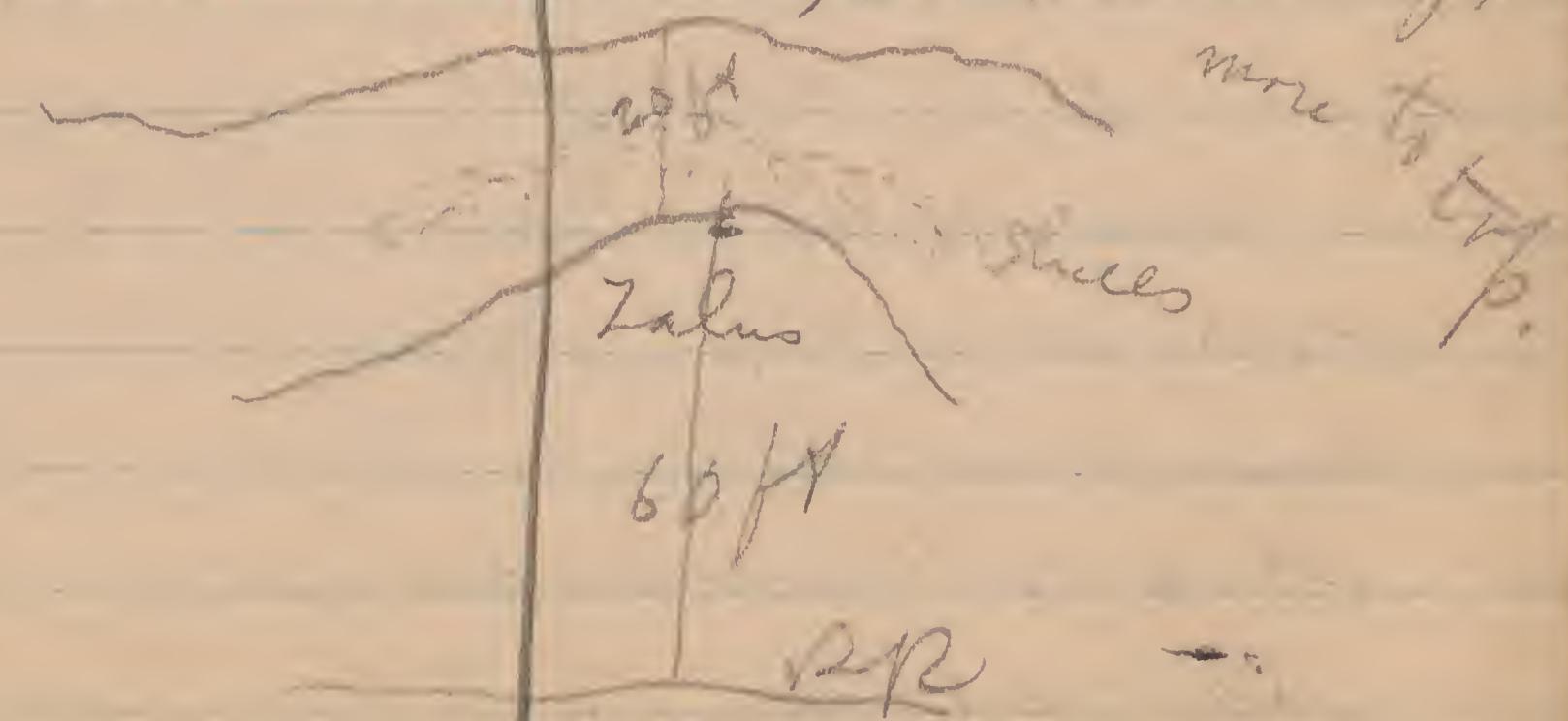
Now we finally come of this
in the great third layer.

A close look shows no
difference between upper &
lower part of this, & it is
all probably to be covered
with new loam but is
lighter than 10 cm.

cut IV

The high bluff at m
are yellow(light) (not blue)
loam (see sample m) but
they contain some fine
brown nodules. (See open.)

The upper part is vertical for
18 or 20 ft & then slopes
irregularly along a talus.
The shells are scattered through
a layer reaching to within a
few feet of top & nearly to
bottom of vertical part.
Say through 10 or 15 ft - but
there is no sharply
defined shell layer.
It is 60 ft (by barom.) from RR
bank to shells, & about 20 ft



The main part of this
bluff along lower part
of crescent, however, is
like at m. & contains
more or less fossil
I got the fossils at m. either
by digging, or on freshly
exposed red soil surfaces,
and ^{at} little below m - the best
bluff shows light yellow loam
in vertical part, & fragments in
calcareous shells, though
I could not make bank.
Below is my abrupt talus
of reddish brown (or lighter as
far as I saw) loam which
grades below into fine sand, -
20 ft or more of it.

cut II.

At a just N. curve, the
red soil extends to bottom of
cut - no sand & the
upper loam, 20 ft or more
shows vertical joints &

^{& more nodules}
forms exposed. Cut
just north there,

Before Francis stirs the
bluffs reside, & indeed
there is just a general slope
away back east, but
a couple of miles below
St. Joe, I call again ^{the}
the badlands along the
river.

The sand bar (above
St. Joe must be at
least 3 mi. long & over
a mile wide in widest place
& all day clouds of dust &
Sand were raised above it
The wind blew from the west
& a little N. W. & the
dust would be carried in
line with the headland
below the city. If the
wind was from the S. the
dust would be higher

up along bluff which I worked.
The stream here is divided into several channels, the main one being shown to Francis in report of the C.B.S.C. R.R.

It appears to me as if there has been a sand dune formation along the river above Francis station and that upon this a deposit of dust (red loess) was formed while conditions were still unfavorable to good mesophytic vegetation; that later this vegetation got a hold, & fine loam was deposited, ~~especially~~ covering the sand shells which now form them. In most places along the face of the bluffs there is no very sharp line of demarcation between the red & yellow loess,

but in the one instance specially cited & figured this line was very sharp. This would suggest that for the most part the change from kerphytic to mesophytic vegetation was gradual, but occasionally abrupt.

Occasionally the shells in "shell stratum" (here not definite) are crushed, as if they had been vertical dipping.

The vegetation on the hills is tufted, & of the same general character (& species!) as at Hamburg & at Conard Bluffs.

44 St Jr. Mo
west where ~~Grande~~ st.

cross my ridge

Ridge 70 ft. above
C. & W. tracks

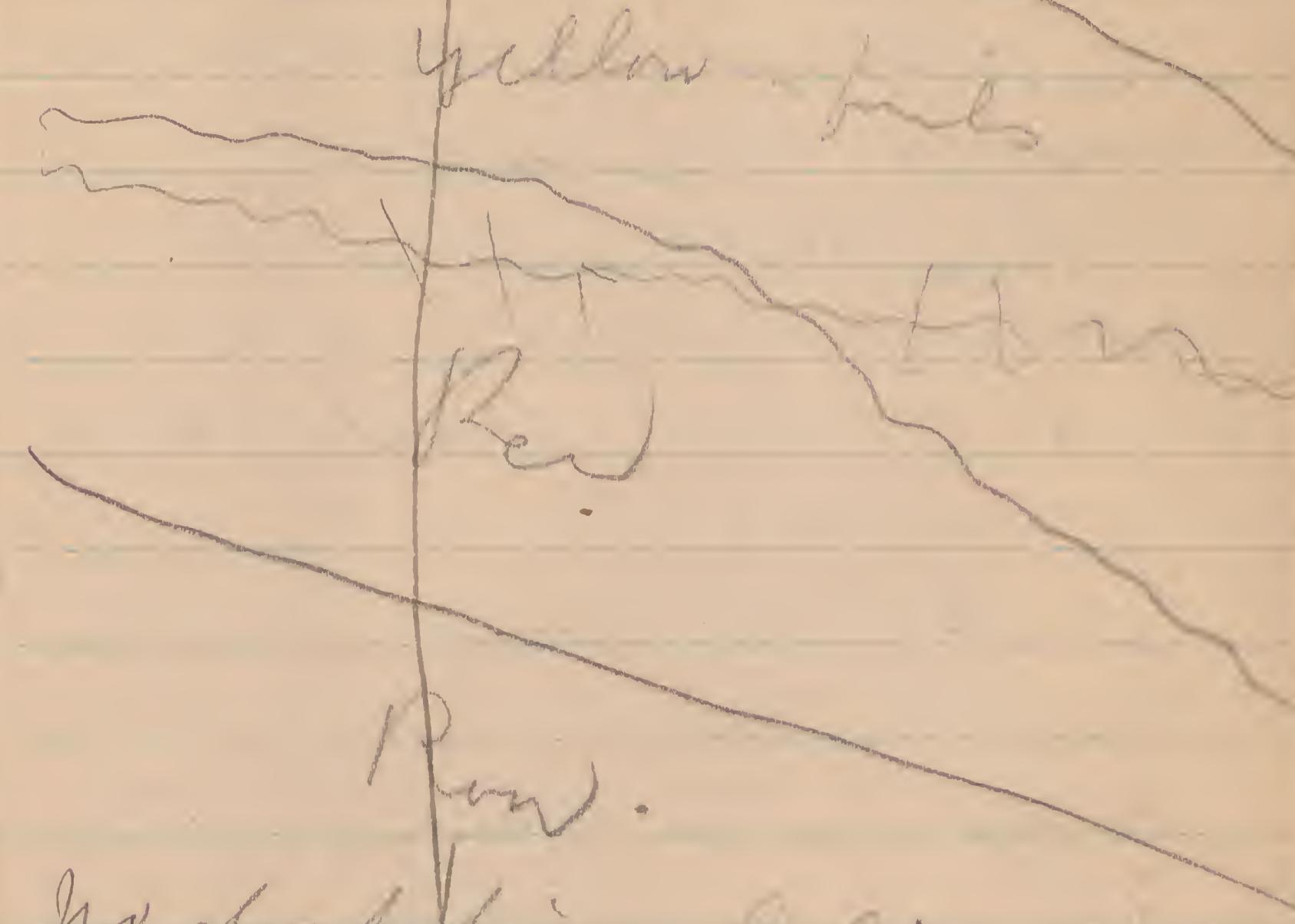
Banks stand 25 ft. back

The yellow loess takes up
all of cut, which is about
 $\frac{1}{2}$ block long. It contains some
shells & weathered nodules —
just like my higher shelf
loess along river.

XI Down on the slope - a
block east (75 yds from)
at about 50 ft. above C. & W.
tracks there is yellow
loess over red loess - the
former with fossils & some
nodules - the latter

The first western
tracks are probably
5 or 10 ft. higher
than C. & W. track
This is a guess, but they are higher

⁴⁵
N. mill. of
Grande st.



No sharp line below

This cut is just N. of
Dewey ave. which
runs at foot of it

Took Chas. W. ER for test May
at 2² P.M. Nov. 29-1903

along C. & W. RR.
saw brickyards - low
brick - light red. ~~yellow~~
Numerous exposures low
down however, along
this RR.

There is much country
along creek which RR
follows.

As we approached
Savannah I could see
drift in the cut
(there are no banks)
the country was less
rough, & there was
little low on top.
Savannah is 11 mi. from
St. Joseph.

Between Savannah & Wyeth
there are small cuts some of
which show only drift (Kan.)
& others a thin layer of loess.
The topography is Kansas
& the borders show it, too.

At & beyond Bea. H. I
could get a wider view
of territory, & it is
desert-like, Kansas.
Cut shows loess -
one shows rather fine
drift and a couple of
feet of loess, with a
dark brown band at base,
less than a foot.

48

49

72

To St. Joe & Kansas City
Mo. Pacific - p. 238. - 69 mi.
Burlington R. p. 166. 63 mi
" p. 165 _____
Chicago Great Western p. 95 - 69 mi
Santa Fe - p. 189 31¹/₂

~~arriving~~ on St. Joe,
A. T. & S. F. p. 186-204 (4.200)
Arr. Kansas City 34 mi. an. Lansing 5 mi. an. Leavenworth
4.20 PM. 6.55 PM. 7.10 PM
9.45 AM. 11.30 AM. 11.45 AM.

Kansas City N. Western - p. 237
Arr. Kansas City 26 mi. 5 mi. an. Lansing arr. an. Leavenworth
7.45 AM.
4.20 PM. 5.44 PM. 6.05 PM.

Union Pacific pp. 120-133

Arr. Lansing 5 mi. an. Leavenworth
5.20 PM. 5.35 PM.
11.40 AM. 11.57 PM.

73

²²⁵
⁶⁹
¹³⁶
St. Joe to Des Moines 156 mi
Chicago E. Western - p. 75-¹²¹
Arr. St. Joe ^{{ 2,230 m}
^{2,050 m} an. Des Moines ^{9.05 m}
Arr. Leavenworth an. St. Joseph
Chicago E. Western - p. 95. no.

Santa Fe 20 mi.
Arr. Atchison ^{{ 9.50 AM.}
^{6.45 AM.} an. St. Joe ^{{ 10.35 AM.}
^{7.35 AM.}
Arr. an. Atchison
^{33 mi.} 8.20 AM. 10.20 AM.

M. C. Long.

421 Cypress Dr.

Kas. City 239
Leavenworth 323
562

Arr. Wilson an. Kas. City
1.05 AM. 7.50 AM.
8.54 AM. 5 PM.

Arr. Salina an. Wichita
(500) 7.40 AM. 6.40 PM.

74

75

Plants at Abiquiu

76

- Chilopsis saligna* - "willow"
Pinus edulis Eng. - Pinon.
 " *ponderosa* Gouy, Yellow Pine
 " *cembroides* Zucc. White Pine
Pseudotsuga douglasii Carr. Douglas Spruce
Juniperus pachyphloia Zucc.
Clematis drummondii T. & G.
Berberis trifoliata Morel.
Argemone platyceras L. & O.
 " *mexicana* L.
Silene laciniata Cav. var. *Greggii* A.
Larrea mexicana Morel. Creosote Bush
Koeberlinia spinosa Zucc. ^{very spiny} Junco,
 or *Adolphia infesta*
Morinda speciosa End. Mex. Bunch
Acer grandidentatum Nutt.
Robinia neomexicana Gray
Prosopis juliflora DC. Mesquit.
Prunus sibirica HBK. ?
Cercocarpus parviflorus Nutt. Malibay
Rosa foliolosa
Cucurbita foetidissima HBK
Xanthium canadense Willd.

77

- Mamillaria microseris*
~~*Echinocactus longinodis* & *gracilis*~~
Opuntia arborescens - Cholla

No. 9 view from French looking
NW.

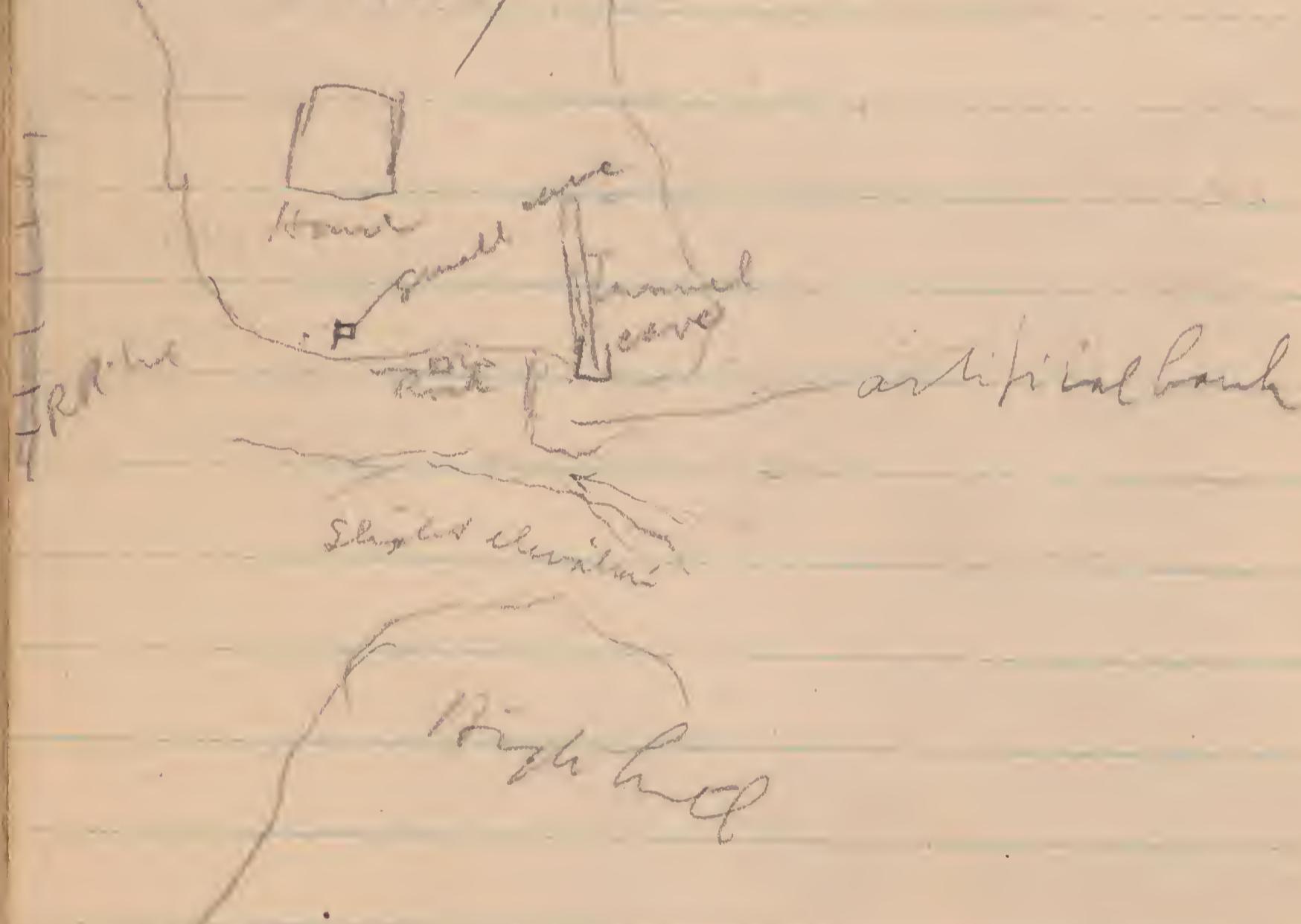
No. 10 in looking NW. from
platter ridge.

✓ No. 15 view looking nearly S. cave to
right & other small cave to left,
just below house.

~~No. 16 - same place. N. W.~~

✓ No. 11 closer view of cave & rock looking
nearly south

Ridge



✓ No. 12 taken looking S.E. Cave in
right under house.

No. 7 looking E. of SE.

" 8 - " E. of south - from house
about 150 ft. high

River is at least a mile E.
The valley is for 5 miles wide

The water in 1903 was about
Symphon cabin occupied called
Buck bush by common

The water was nearly 100
feet over RR bridge just
east of cave - creek.

Cave is about 75 yds from RR
Highest point of common
ridge S. is about 180 ft
or more.

As to possibility of water being held & forming the silt layer in the cave - there is a low ridge or slope on the N. side of little neck, while the creek runs up against side of valley. The rock cuts in here & it is probable that the barrier extended across mouth of valley. At any rate, with ridge of clay on either side, it would be very formidable. There has evidently been slipping on both sides.

Aug 1st 1900
Wiff 1" of brown str.

X
2-3 ft yellowish

1/4 ft blackish
with yellowish
bands &
interbedded

foot

2" yellow, sandy

3" sandy loam

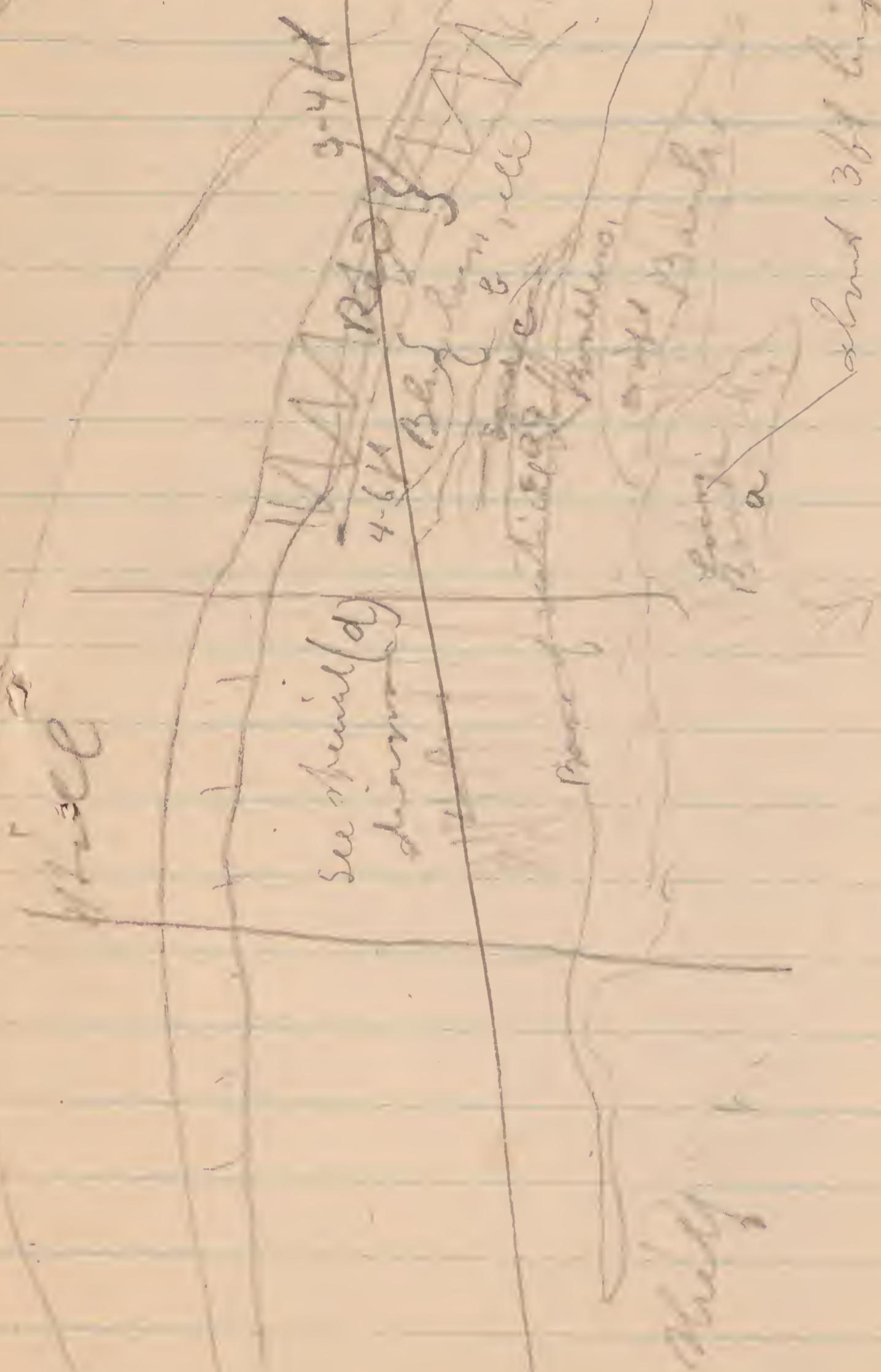
min. oxidized sand
loam

about
20 ft
fine clay
with yellowish
bands.

Barren

pocket of
fine drift
sand.

The next cliff west
of Hwy 101, just
of asphalt interest.

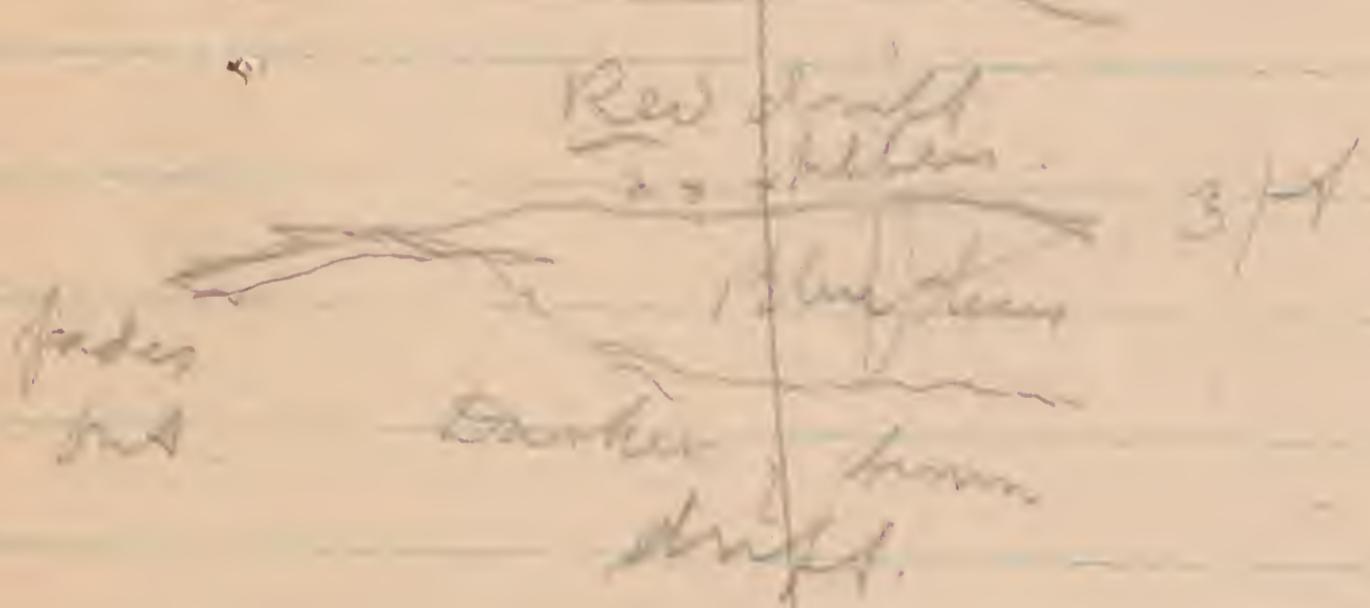


The lower part is blue (about 3 ft. exposed) with large iron blotches streaks, & the slabs are in places in waves, as if heaved at edge of wave - a very few pebbles occur here, & there are lumps of loam free from them, & where gravel & sand appear, it is in streaks - This is in a sort of shelf beyond it the main cliff has drifts at base. On one side there is a pocket of sand (c) & parts of this have a little clay. In the I found most of the shale marked (c).

The deposit (b) is hard heavy clay, but like (a) is more like joint clay. There are slabs in it & regular bands with

pockets of sand.
The drift between the two layers is red with sand, & contains boulders.
The topmost layer is redder than lower, is mostly sand, some pebbles & gravel it shades into yellow sand
very sand.

At (d) The section looks like this

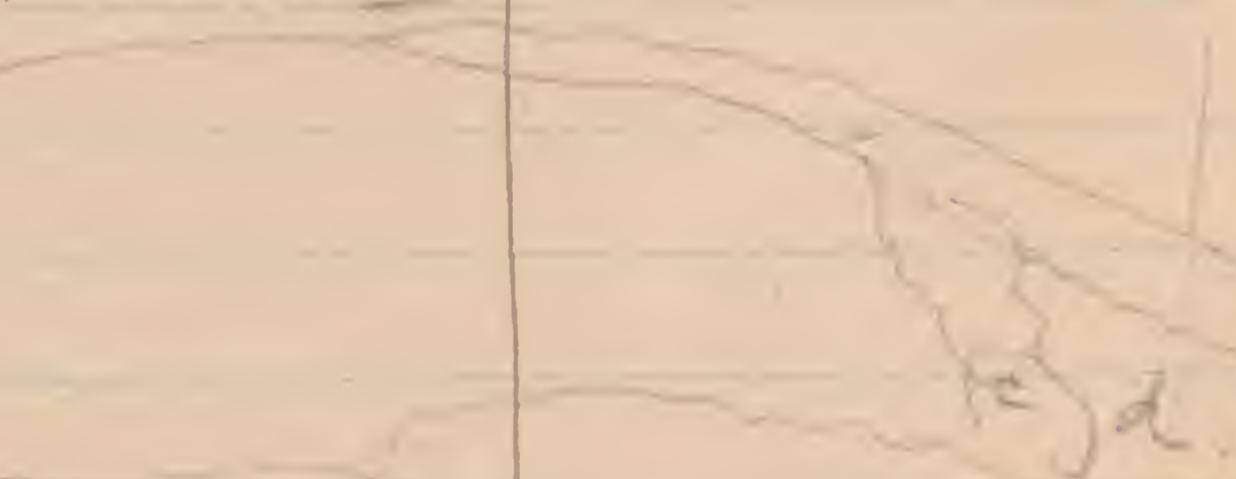


The two drifts are here very clearly separated by boulders & on the shelf (e) The boulders again below 25 feet - Red sand - as

this is probably marginal carbonation, but it appears as if there had been an old Hamon layer & the Hamon has blown over it & then either another layer, or Hamon got some elsewhere, was piled on top, & then Hamon.

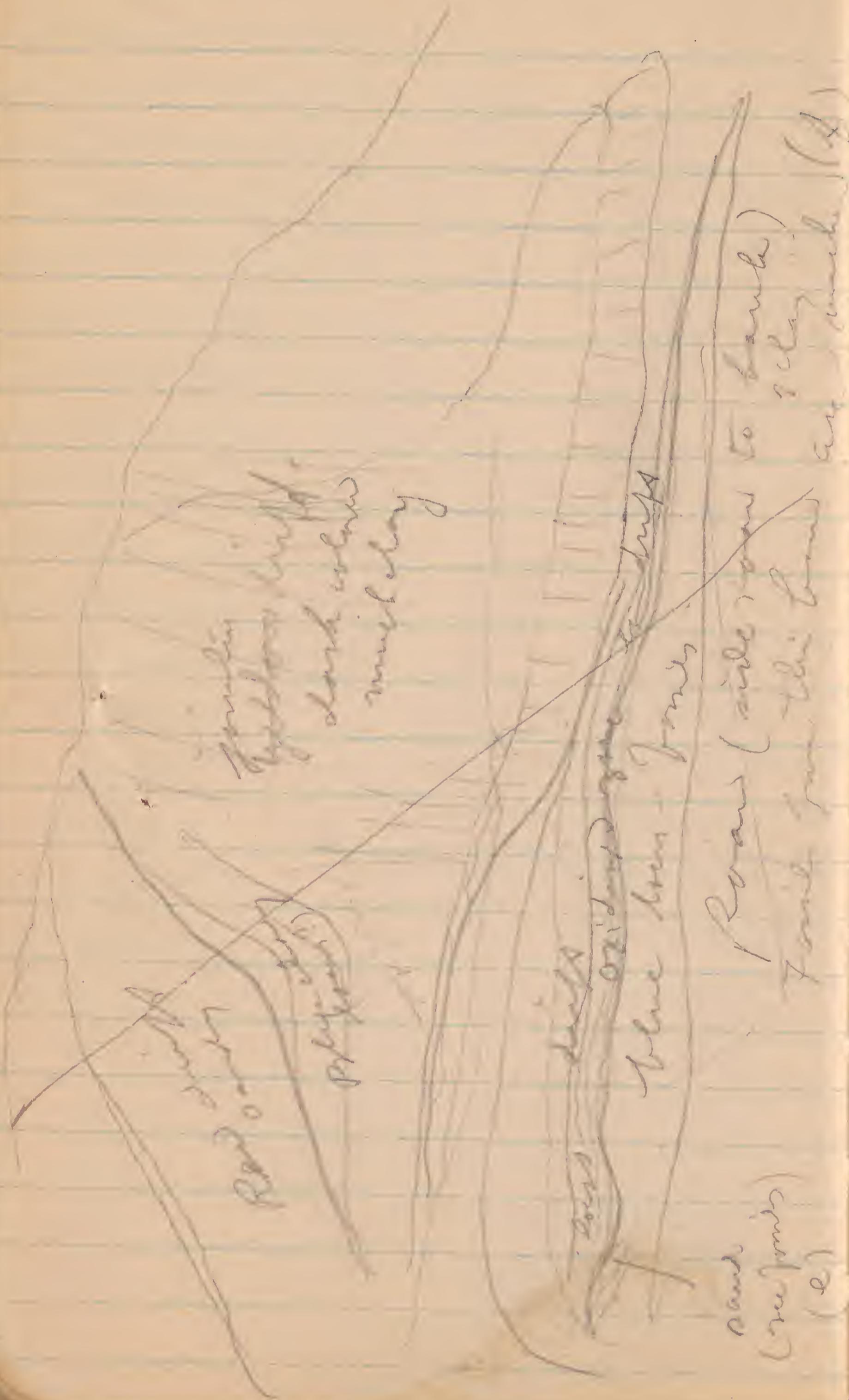
The Hamon trees are not very sharp, though bridges would occur.

Photo



Layer a,
Boulders

boulders over on the
lower, especially (e)

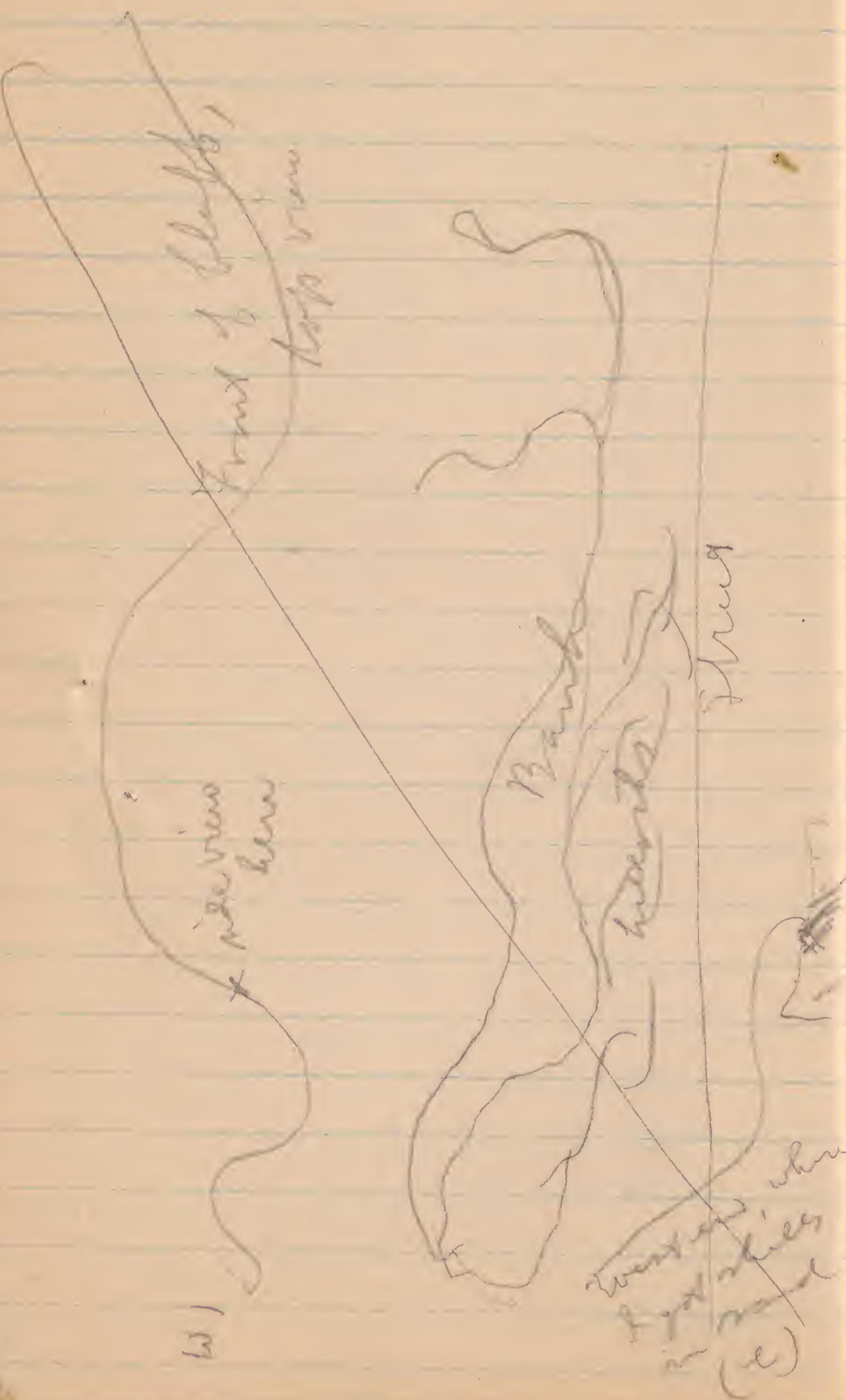


Finally (a) is same
as (f), all along
of the ridge & the
is very well washed
as (f) there is a
curious loam-like
layer, rather blue
yellow, but more of
the latter, more or
less stratified & tougher
(harder than loam &
more like joint clay).
It looks as if it was
assimilated with water.

Took photos of boulders
here on top of the
hill seems to consist
of bluish joint clay
with lots of iron

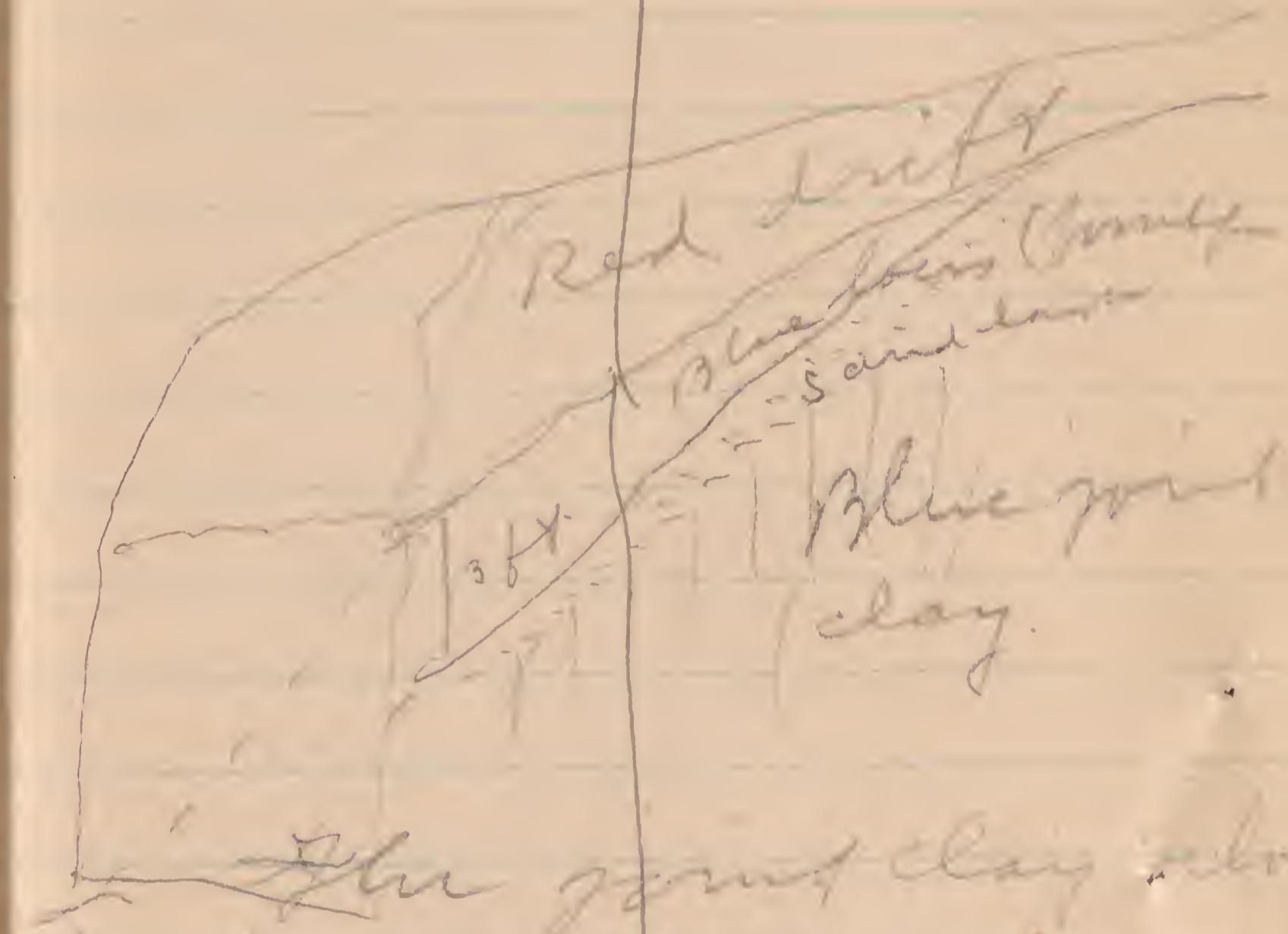
88

6



89

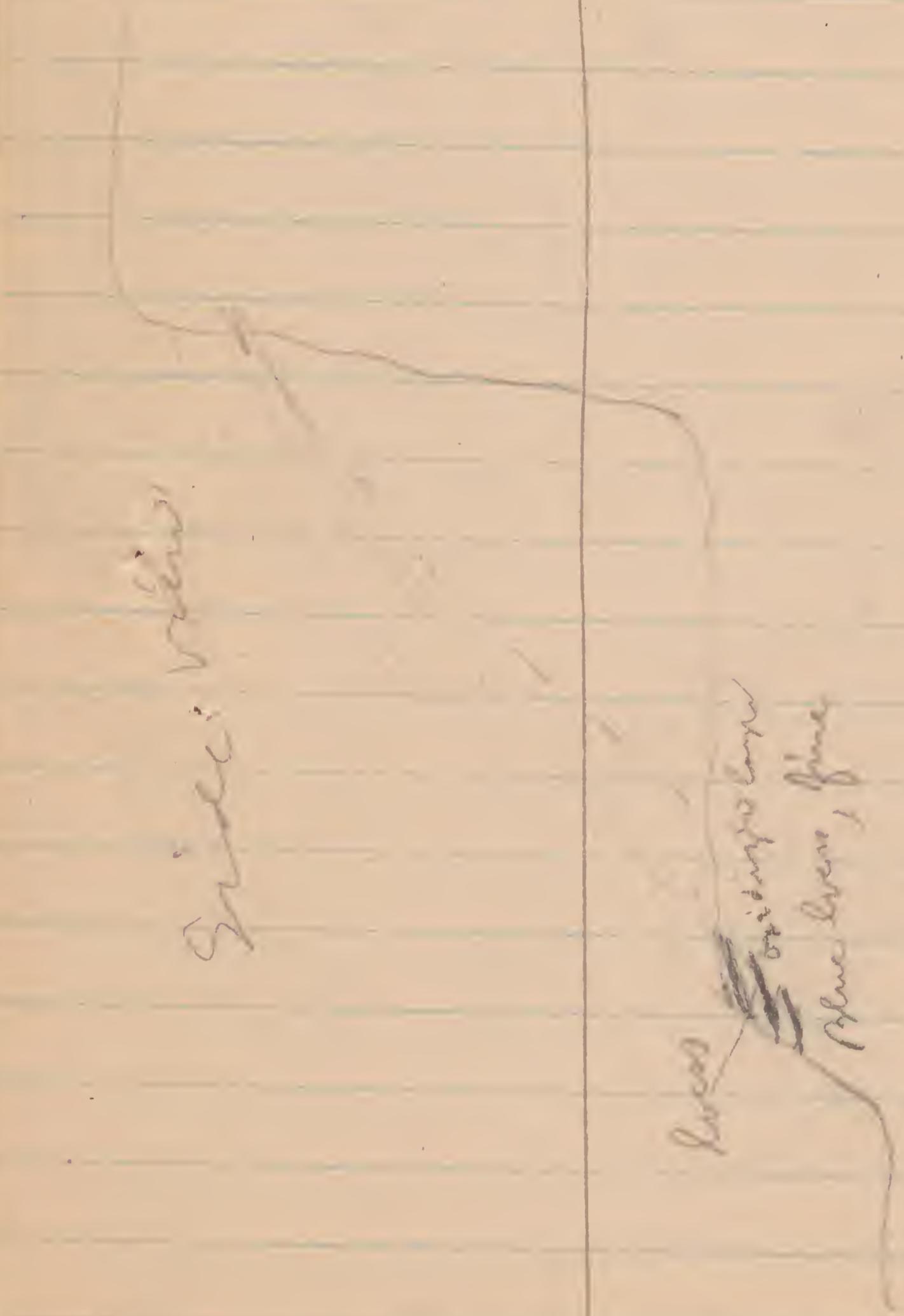
X = shows sand + drift
below, then loam (blue
or miliform) + then
red drift



The joint clay also
looks like Kanner
The line between sand
+ loam is quite
sharp + vertical.
That between red
drift + loam is
quite sharp

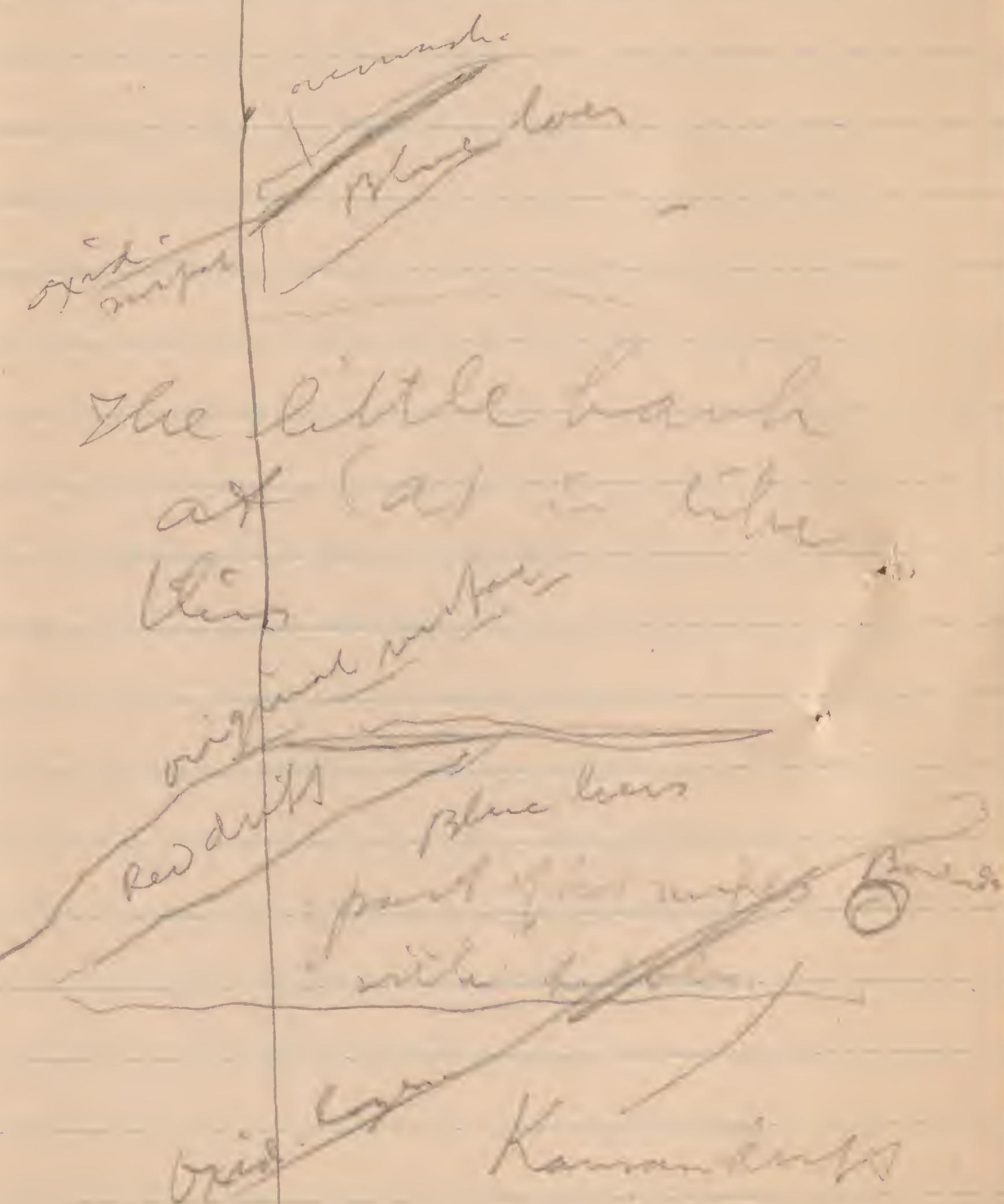
70

that the materials
either down or down
in trans. section is
known by amount



91

The band of loamy stuff
above oxidized layer
(I) looks as if it had
been overwashed



The layer (yellow at
top) seems to consist
of two horizons
the lower one oxidized
to light brown

at (at least) three
are often in layers of
sandy loam - also
sandy loam.

It is evident that
around the hill was
a layer of loam &
now when part

of the
loam

set away at E. on
it appears sandy
there were two loam.

The two loams
set E. on (supposedly)
are like this
(looking E.)

Reading
three loam

join closely
of sand

~~Reading
three loam
join closely
of sand~~

The loams are
especially in
oxidized layer &
above it & they
are all through
thin exposed

The sandy parts of
either end may have
been sand bars
in the Kansas.

94

Blue loess at (d)

in marine section
(reef shells.)

This is continuation
of layers a + b.

mix'd loy - out. No. 17

The buff ad W. w. (phot.)

Shows line between
drift & loess sharp,
but no ferricrete.

There is ferricrete in
drift below loess.

Few shells higher up, &
thin band.

The brown loess at (d)

has very, bands of
iron oxide & there
have occasional small
gravel & a little sand

95

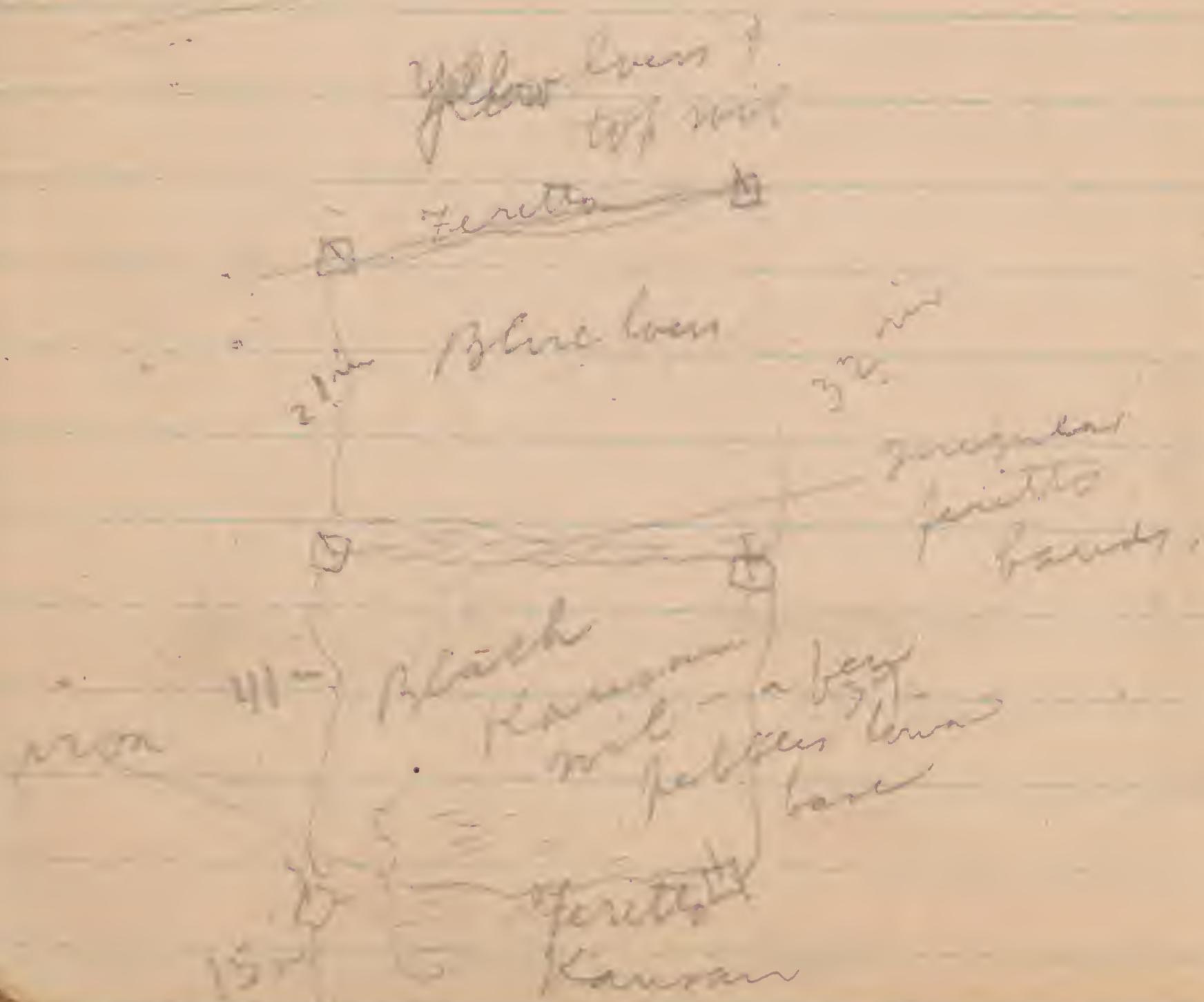
96

97

Road running N. through
middle of sec. 20, N.W. of
Albert, Scott co.

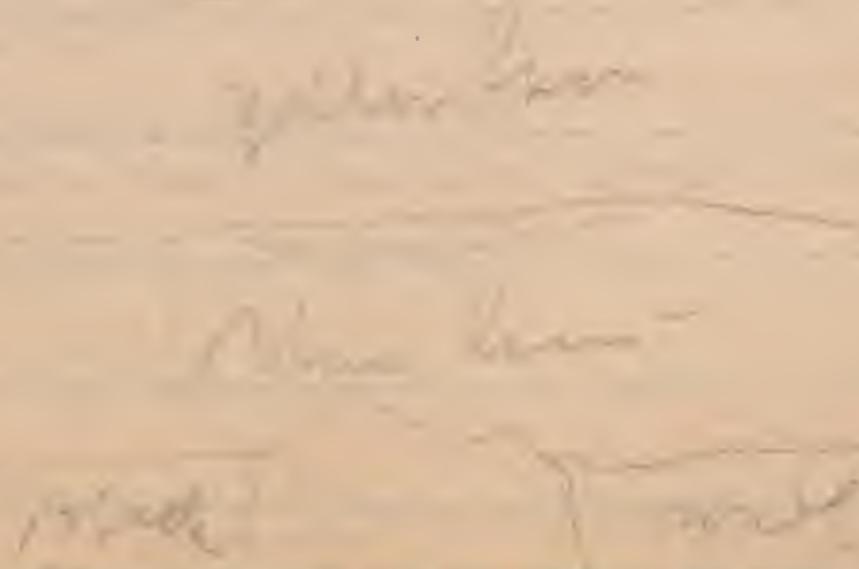
Oct. 18 1904 -

- 1st cut, not far W. of S.
line sec. 20 shows only
yellow ("dowm" layer) - No
fossils, no bedrock no white.
2nd cut on lower (middle)
slope of a ridge - shows
following (see photo)



Iron tubules are plentiful
in the loess & in glacial
soil beneath them are
many iron nodules.
drift below is quite
pebbly - made up of
sand samples of yellow tan,
blue loess, black and
(Kansan) & pebbles from
drifts -

The several ferruginous
zones are more or less
in definite, the boundary
plane being between the
two loesses & in others
between old loess & black
buried soil.
No fossils -
coloration (see photo)

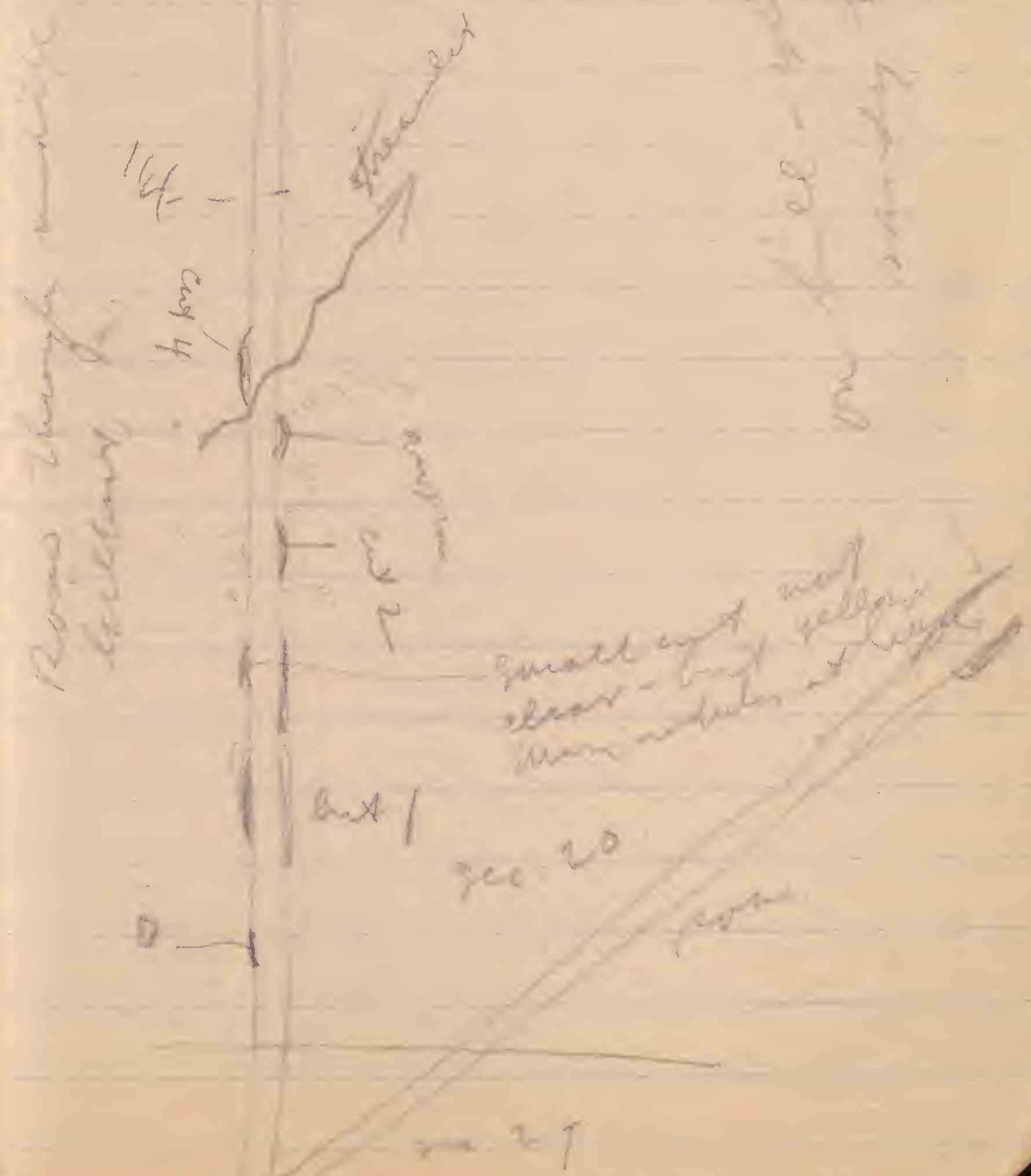


There also fine nodules in
blue bands.

Cut from Alabamas (N.
from creek, there
about 8 ft of yellow
bands on blue bands,
of which less than a foot
yellow. Both sandstones
are found
about 150 ft of sea
west, on W side river at
subsurface on gentle
down slope to N. There
is a little yellow band - 3 or
4 ft, mostly yellow, & a
further sandy oxidized
layer, with a little
thin brownish below
it.

100 m

- Middle



blue & green
greenish brown 106
greenish brown
(or - green)
S.



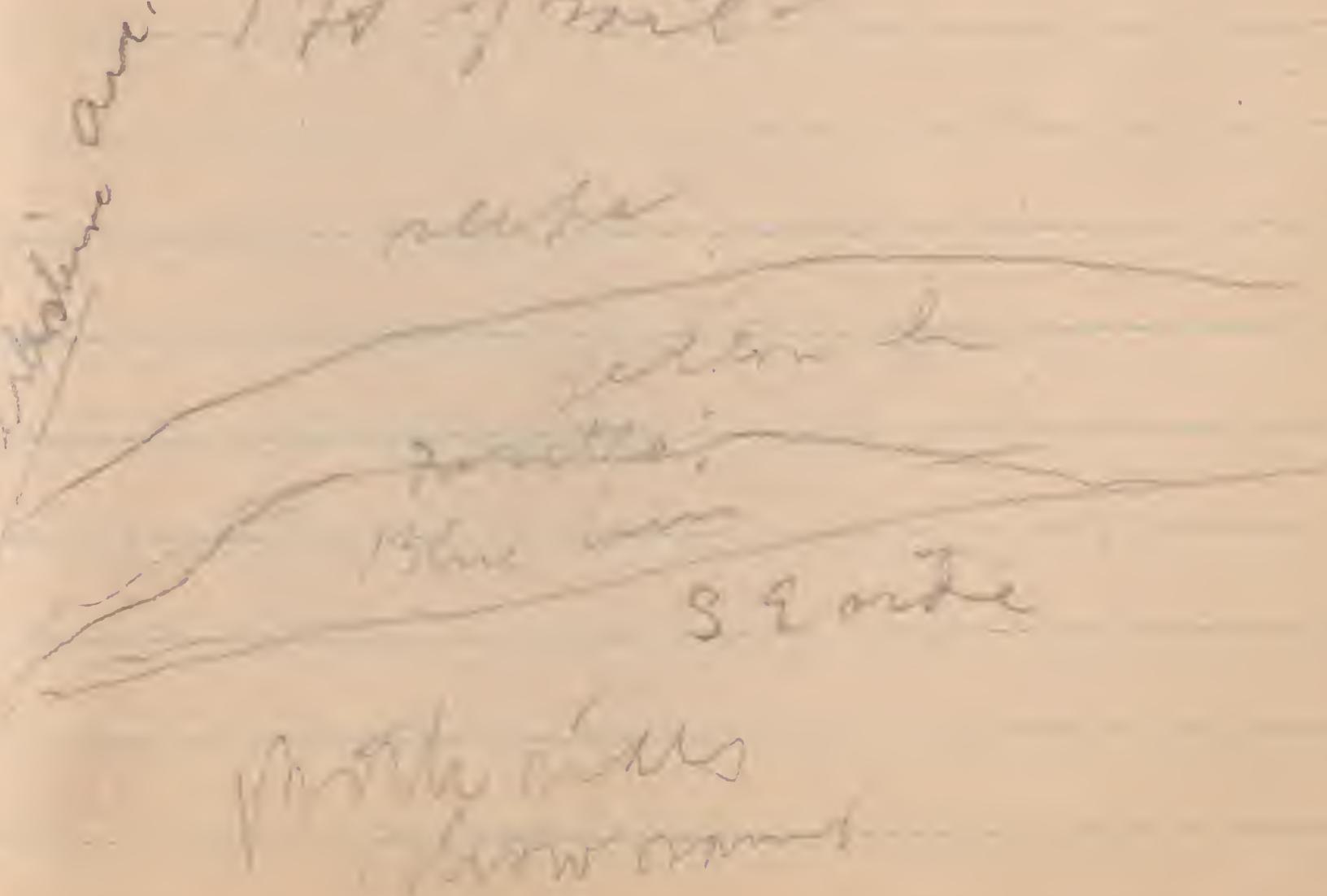
N

Opp Current Ave. a
cut for new street
shows yellow layer
above, the blue layer
its upper part with very
thin beds & nodules, &
free of fossils - No
kerns

107

The blue layer is
typical, tough,
& the yellow is thicker
a sharp分界
zone is mostly in
evidence.

Stand Termes - a
boulder on top of
bed (or
off current).
How easy to cross them
I have been told
The yellow layer is
about 4-5 ft deep &
1 ft of white



At x a streak of blue
loess (typical) about
a ft deep, but I think
as if yellow loess was
below it again. The
lower yellow loess is probably
overwashed.

The sandy stuff at y - is
about four sand in part
& is not so heavily
cemented
In out there is yellow
loess above it.

At cor. of Jersey Ridge
road & Eddy St. Davenport
(where car turns)

Facing W. is a
bank like the

2-3 ft Red - loess?

4 ft. sand (loamy-like)
at the top 9

6 ft. } Blue loess - streak
} of it pure blue
some yellowish
reddish & brownish
platy & tabular

sand
cemented, etc

110

N. side ~~Harrison~~^{The} W
of Harrison -

ashen loess 1-2 ft
distinct furrows.

20 ft
yellow drift.

Plant:

20 ft
blue drift. 25 ft

I found shells in
overwash from loess, -
none by digging except
in loess.

111

Oct. 22-1904

Road to Pueblo

a) 1st exp. N. of road W.
of CR & S.

Soil

Road

The lower part is blue, non
compact, doesn't weather
(crumble) & has many
fossils. Breaks up
into yellowish at top
blue, blue-yellow parts?
A few fine stones & also
blue

b. Small exposure showing
only upper yellow layer
no fossils - a few rocks
rest of surface is brown

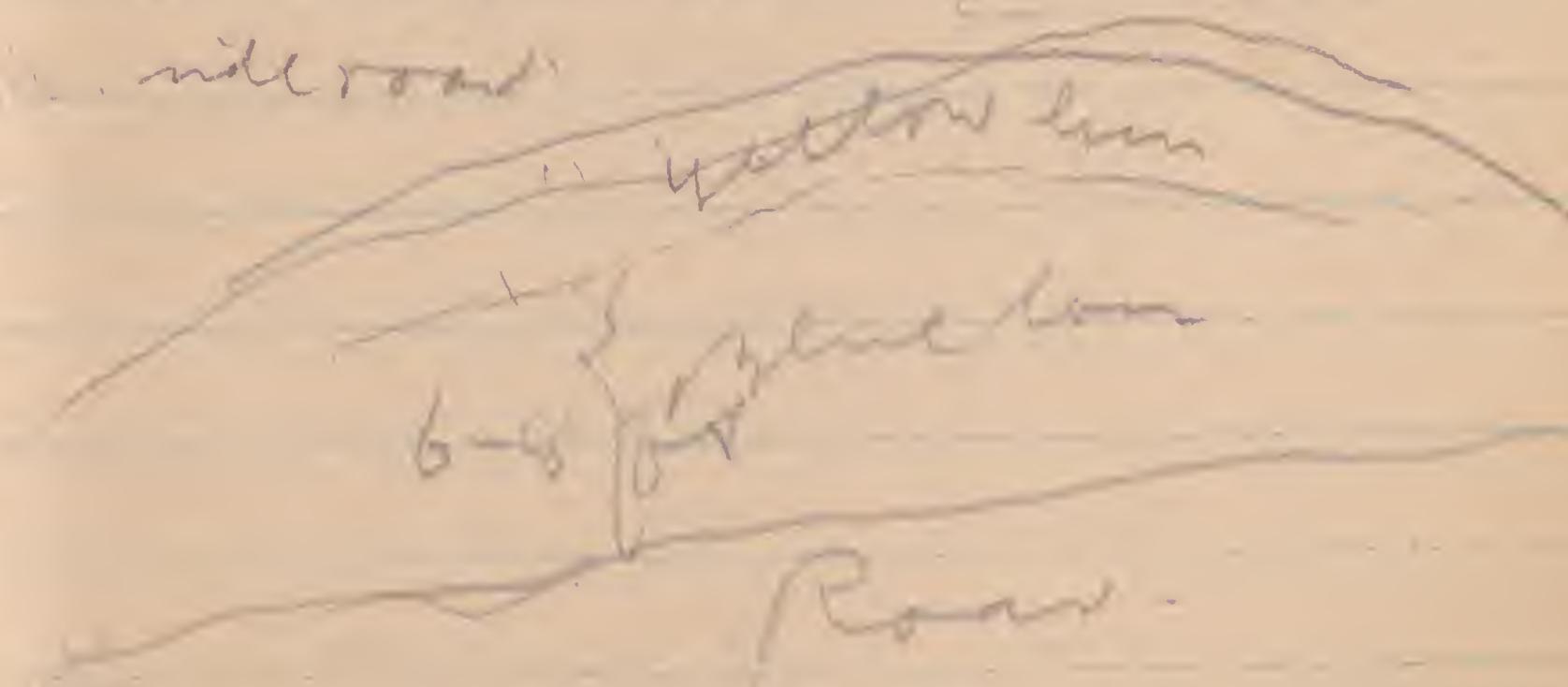
c. Gravelly a ft or 5 m. W.
of N. & S. on

d - Is a cut on E. side down
to main E. of pueblos
The older 2nd is 20-30 ft.
lower no blue
The rest is blue, very
porous, I feel of iron
butters & a few nodules
But butters very plenty &
fossils abundant

Limestone occurs

The change is rather abrupt
From yellow to blue
soils - in 3-6 in.

The upper part has
much iron
on side road



Partly covered with grass
& shrubs

at - a trace for
several short lengths
low below - comes
with iron above & 14,000
feet in top - 24.
are found.

At (Q) there is a valley at
head of ravine, N. of road.
Several cuts are being
driven, but everywhere
blue lies underneath
yellow in top. No
pebbles & no fossils -
about 100 ft. N. of road,
& on W. side of ravine
a little side ridge has
drift exposed - as no
quite pebbly below, grades
into blue joint clay on top &
this has a few small
pebbles, & in that are
about 2 - 5 ft. of yellow
loess -

In low, just W
out of cut can
see it.

From yellow
the line between the yellow
& the blue drift clay
is fairly distinct - just 2
or 3 inches -
I found no trace of fossil
~~in any of the layers~~
near bottom of ravine & near
road (just where it meets
bottom has about 100 ft. N. of
road). I found a little
of the blue joint clay
with a few small pebbles
exposed -

A little nearer the road
& several feet higher
was real blue loess -
lime nodules & tubules, & a
few fragments of shells -
Seaweed is doubtful (see spec.)

at - a true
river shows
from below
with iron &
yellow
above that is a little
yellow loess -
The whole basin is
flanked, & overgrown
there are bright pines
now all the blue stuff -
This place is (no doubt)
an old river bed for a long time
scattered by innumerable
the head - drainage
to judge by looks very clean
and active
9 - new road here & on N. side
of main river -
Yellow loess at top &
a little blue shows
at foot of slope -
not clear -

h. is rather low, just W
of small creek & not even
12 ft above it.
The upper 6 ft is yellow
loess - no fossils
This turns below into
blue joint clay (or sand) -
with small pebbles & large
grains of sand - or
few only - (or sand)
The transition takes
place within 3-6 in.

It
is just west of little cut
about middle of section
2 to 6 ft. deep cut off
bottom of hill
yellow fine
soil

Buckham Brook ^{Andam}
bedding about 2 ft
or more thick
only below into ^{green} ^{green} ^{green}
Karam

The loess is yellow, no
fossils & looks like
desert.

The transition of Buck
is sharp.

This is a long cut
(extending 3 or 4 ft.) and
runs from top to bottom
of hill.

The loess begins a little
below top, goes up &
is almost horizontal at
its base.

This shows on S. side of
road, but the section
is better on N. side.

Way up the cut there
is a foot of blue joint clay
with some grains of sand.
It changes to loess above
& grades in some places
into Buckham gravel
with which it runs to

be closely connected.
The loess is all yellow here
(Doran!) & there are
no fossils, no shale
nor sandstone.

It is a small cut (6 ft. deep)
all in yellow loess
on W. side of road only -
5 ft. deep shows

Buckham gravel
a foot of loess and
just S. of h. a long
hill slopes up to S.
At its base Buck
gravel shows but
above only loess.
The cut is long but
not deep.

Small exposure - yellow
2 or 3 ft. + 2 or 3 ft. blue
loess with tubular but
no fossils -

On S. side road

m - a long cut - up like
only 2-4 ft deep &
all yellow loam -

becoming sandier like
below - no fossils

N - is a low cut 2-6 ft deep
on long hill sloping up to
N.E.

This is same as M
or is a long hill & other
same as M & N except
this at base ^{of the} a little
gravel is exposed.

cut about 20 ft long
& 6 ft deep



All yellow clay, the
inner few feet more
loamy - with roots -
there are light blue lumps
surrounded by oxide bands,
as if bits had been
leached by water decaying.
These are scattered about
from 1 to 4 ft. from top.

From
T. Blue Licks,
no fossils

Oct. 23-1904

Bank looks like
the upper part of
blue layer - with it,
fine bands - iron
bands.

They were very faint.
The oxidized band is in
some places thin,
making a fast section of
& all that seems to
be blue layer.

Upper part is yellow
layer (bluish & mottled with
angular yellow) & is full
of fossils - which are
plentiful $\frac{1}{3}$ of the way up the bank, which
is about 46 ft. high.
About 2 ft of it is
blue layer -

The yellow layer is
less fossiliferous
southward, - the blue
northward.

If only 3 or 4 exposures
was visible I would think
that there was less
fossil & yellow now
but center, & northern
the reverse.

The fossils in yellow
layer are not good.

The dark fast layer
(about 4) as it
appears in picture is
wetter than other
parts.

A few nodules appear
in upper layer & iron
streaks are abundant
in lower, especially
in its upper part.

The oxidized layer between
the two layers shows
fine lamination - very
irregular, but
parallel.

Bluff 124
blue layer in some places a decolorized
core extends into blue layer &
surrounded by oxidized layer
(see photos)

When bank was scraped
no line could be seen
between the wetter &
dry part of the loess
at the upper loess shows
strands of blue (cemented)
loess, each with dark
central line (roots)
these blue lines are
nearly $\frac{1}{4}$ to $\frac{3}{4}$
diameter,

The top 2 or 3 ft. is
looser & redder than
lower part -

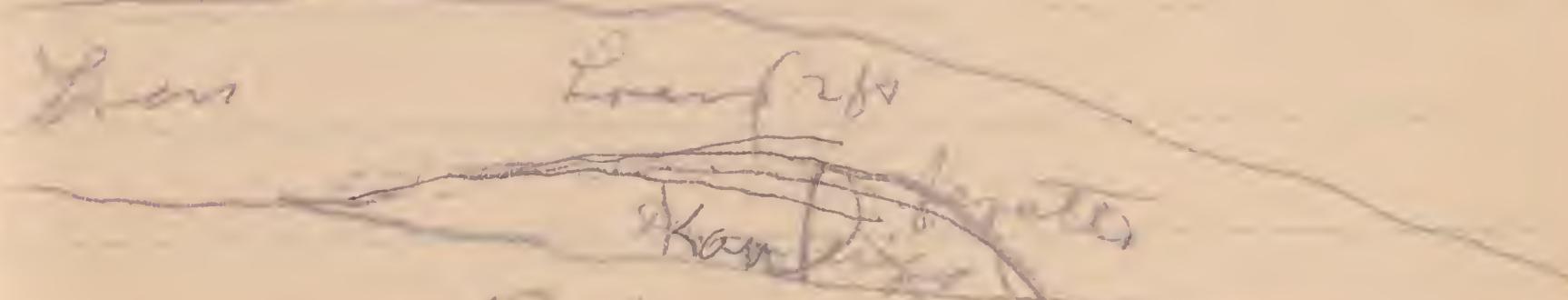
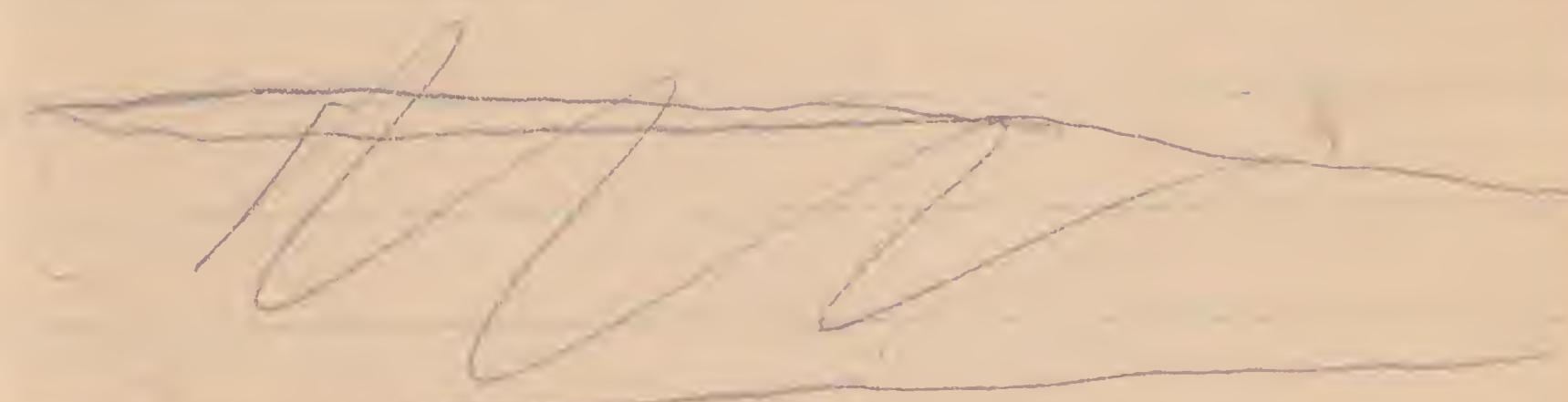
Sod (a black line) few
inches from a
continuous band, but
below that no black
soil!

125

Oct. 25 - 1904

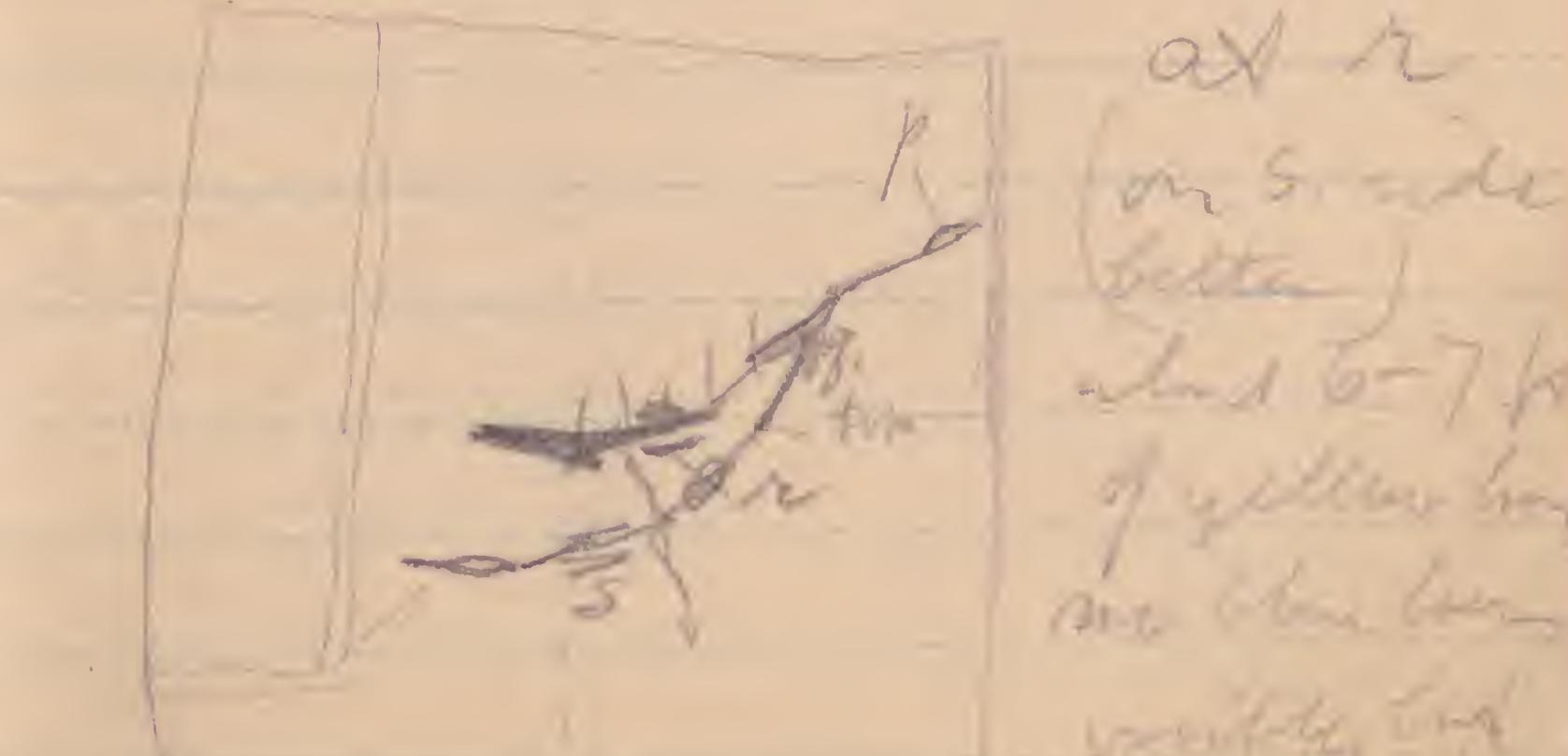
SW - town well chink

Cut six feet deep on
N side of -



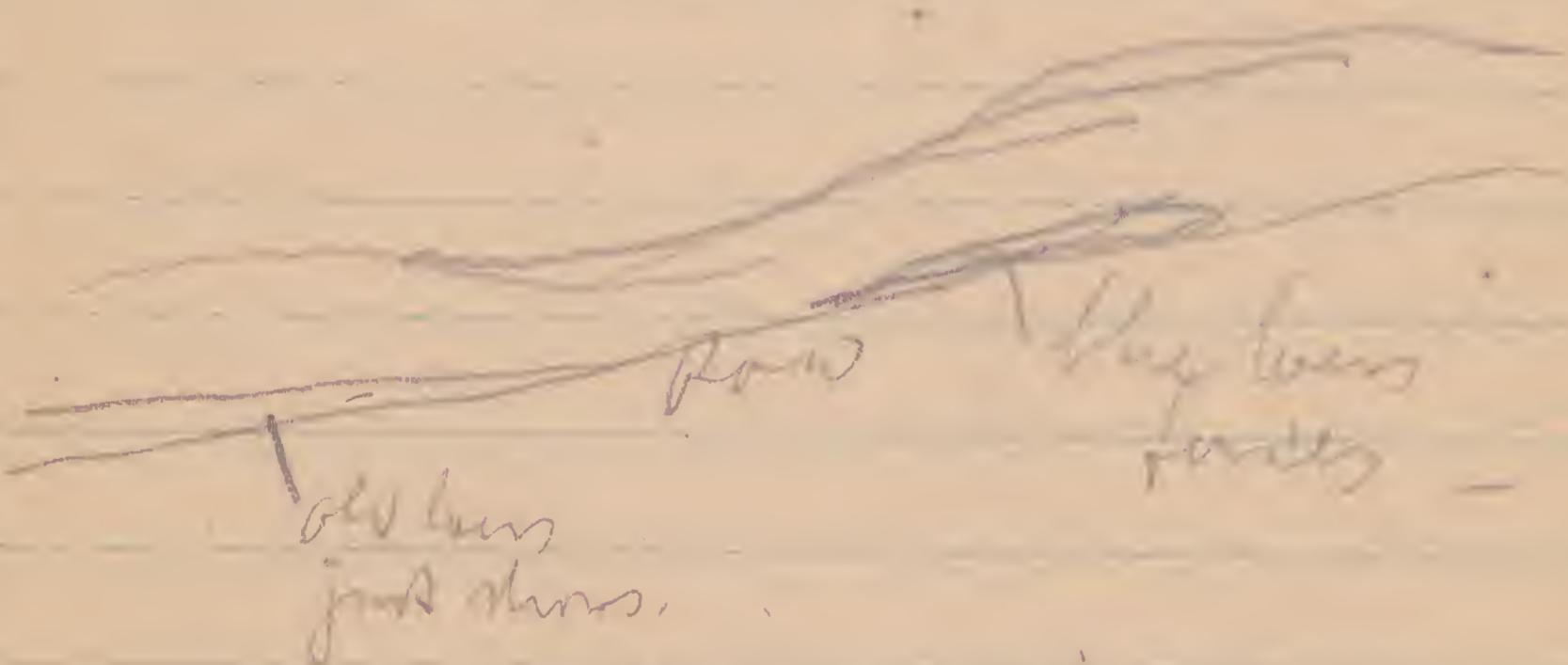
Loess
Turf
Kankakee
River
Soil yellow - non plastic

in. 20



iron-stained top is brown
at base.

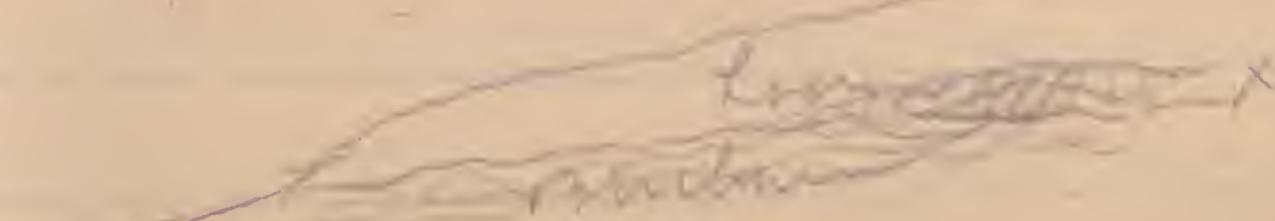
At g. on side river
about 7 ft of yellow
loess is exposed in bank
& at bottom, forming
bottom of gutter blue
loess just above. Edges
full of talus.
About a long slope going
up to sea.
The blue loess shows marked
F m. joints, especially
on upper slope.



The line between the two
loess is sharp. In
places there are very
taluses near this line.

In other no difference
to line but change
abruptly.
The blue loess can
be seen nearly to top
of hill on both sides
of river - best where
on E. side -
yellow loess - 4 to
6 ft. deep.
See joints from blue
loess - some in yellow
At a Town just below
River bed to 3 or 4 ft.
R. Bank sand
Moss - th. is 2-3 ft
thick & then blue joint
soft below it.

At s. long hill which
shows old loess in low
ly & then blue 3-5 ft.



If in yellow loess & is an
inch or two yards into
Burdian gravel & this
appears to be 4-6 ft thick

Then common

Loess has no ponds etc.

At x 1½-2 ft of dark
material appears - It is
gravelly at base &
goes up into black
loess - I could not make
out loess clearly, except
that Burdian is distinct
below.

The line between yellow loess
& blackish gravel which
is either on in loch. It
is quite sharp.

Here is no blue loess

The gravel has grain
of sand & small pebbles -
coarsely on lower part.
This deposit is badly
blended but 3 places show

There is no blue loess but
blue mottlings appear in lower
part of yellow loess.

At n. of the little stream,
blue loess appears below
6 or 7 ft. of yellow loess -
Shrubs & grass make it
difficult to observe them,
but loess is typical, with
more oxide at upper part.
Grows white or yellow

The well cut s. of road are
not good & only show about
3 or 4 ft of yellow loess

At n. 4 or 5 ft of yellow
loess only.

At v. on down slope of yellow
loess for 6 or 7 ft, bottom
(gutter) its lowest part
shows leached blue
streaks & bands (iron
rust?) - It is badly
blended & overgrown, &
doesn't show well - In

forms, water or tubular.
The upper reddish colored
layers show no sign of blue
 streaks -

These outcrops are large, &
 being exposed, but more or less
 at w. yellow loess about
 4 or 5 ft. + toward base of slope
(u.) brownish gravel shows
 at its base.

at x there is a long cut in the
 hill sloping W. - 4 to 6 ft. is
 exposed & it is all yellow
 loess, but in the lower
 part it is streaked with blue
 horizontally, & is compact &
 somewhat putty like -

The hill E. is not quite so
 good, - but similar
 at y - (shows best on W.
 side of road) there is

a very interesting section.
 No fossils were found, &

I noticed no nodules.

Between the two slopes & a very
 prominent band (= Mahanay?)

Yellow loess
 $\frac{1}{2}$ to 5 ft.
Blue loess
 $1-1\frac{1}{2}$ feet

Road

y

Gravel about 1 ft.

a dark colored black, very heavy sand
 with pebbles & sand - looks like Blackland

at 3 there are two small cuts showing only yellow loess.

At 8, in sec. 17-79-6 there is a cut along road-

Near center of sec. 17-79-6 on S. side of road there is a long cut which in lower (western) part shows Buchanan (with Kansan below) at base of bank, then a foot or two of gumbo which is capped by yellow loess - ~~gradest into~~ the line being with rather sharp. Half way up, but for a long stretch the slope is gentler, & here the gumbo grades up into blue loess (no fossils) & this is capped by yellow loess, with oxidized distinct zone between.

In upper part - near

Road

top of hill, very W.
yellow loess seems to
be visible.

134

135-

136

137

138

Mr. Eugene De Mier
Albuquerque, N. Mex.

139

R. E. Banner, Photographer

Kansas City
no. 1 - near Cor. W. 6th & Washington
on Washington st. E. side of st.
no. 2 same - different view

140

Nov 1 { View over Playas
looking W.

2 weeks of cacti before Cholla -
Opuntia in fr.

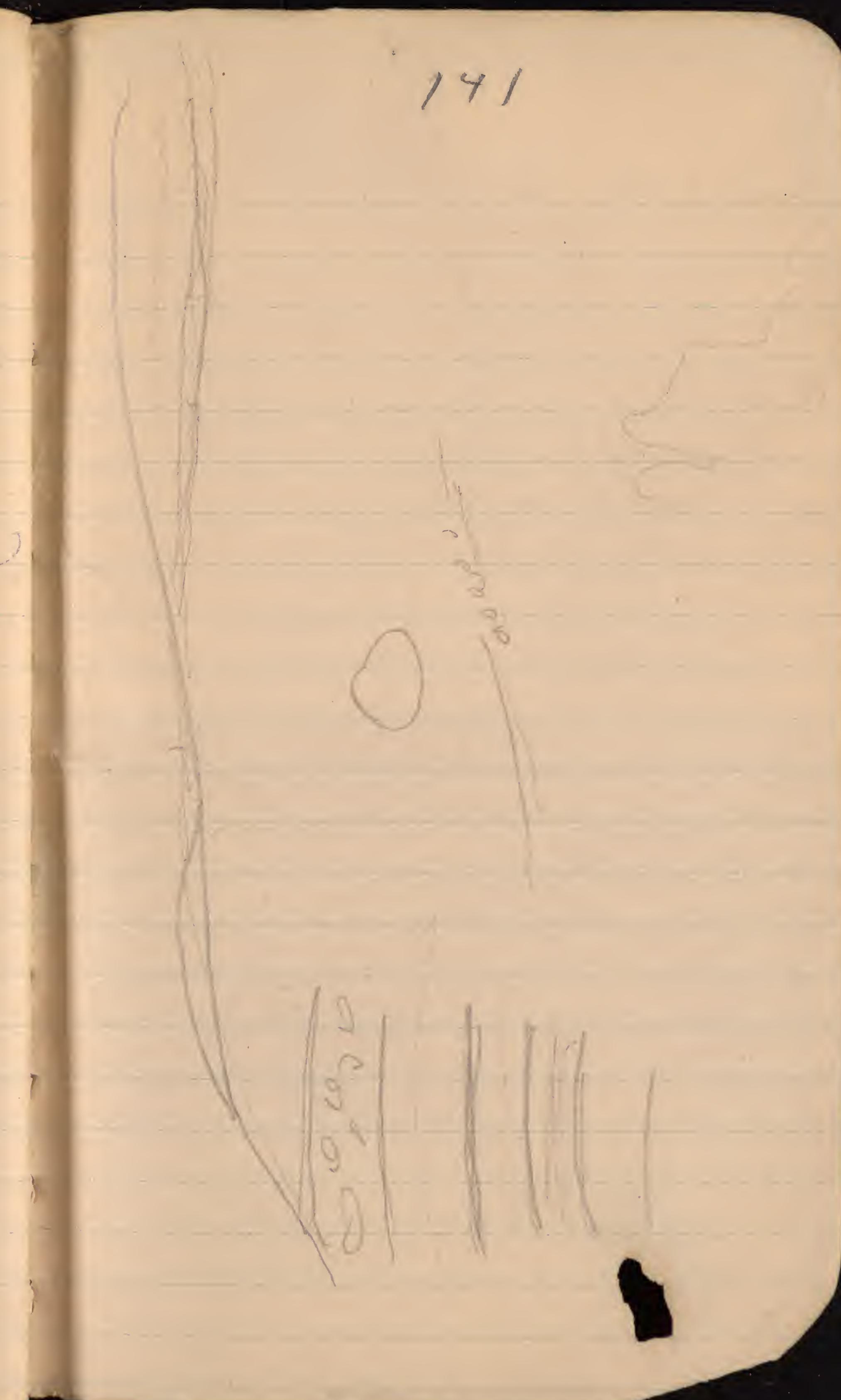
Broad base

Cloudy & P.

Q. - demand mountain

18 - Natural park (posting tree sign)

141



Aug. 27

Breakfast - Clubman	.50
Dinner on train	.60
Supper	.70

Aug. 28 -

Sleeper ¹⁰⁰	Breakfast ⁵⁰	1.50
Dinner ⁶⁰	Mop ⁵⁰ , paper ⁵⁰	1.15
Supper ⁶⁰		.60

Aug. 29 -

Breakfast ⁷⁵	Dinner ⁷⁰	1.35
Card & stamps ⁵⁵	Bottles ¹⁰	.65
Cigar ⁵⁰	Soda ⁵ , basket ¹⁵	Papers ⁵ .55

Aug. 30 - Alpine -

3 meals (team?)	1.05
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Aug. 31 - DePaso.

Rom ⁷⁵	Breakfast ⁵⁰	Dinner ⁴⁵ , Supper ²⁵	1.95	
Soda ²⁰	Wine ¹⁵	Reposado ¹⁰	Steak ¹²⁰	1.95
Dried coffee ¹⁰	Cream ²⁰			

Sept. - Almazante.

Peaches ²⁵	basket ¹⁰	
Apples ²⁵	basket ¹⁰	
as clowderoff		
(wine - 12W)	1.50	Lunch ²⁵
1/3 paper ²⁵	Peaches ²⁵	Supper ⁵⁰
Soda ¹⁵	Peaches ¹⁵	Cream ¹⁵
Box ¹⁵	Chowder ¹⁵	

Sep. 5 - "Meat", Canned⁵⁰,
25-
Landing box

Sep. 6 - Breakfast 60	Dinner ¹⁰
Sep. 7 - Paper ⁵	dinner ¹⁰ , bread ⁵⁰
	drinker ⁶⁰
	stock 25

Mrs. A. C. Arnold

472 - 1/2th str
2nd flat.Manager of Almazante
HotelKarel is a brother-in-law
of a daughter-in-law of
Mr. Arnold.

- ~~xx - Sheep shot near Stevens~~
~~x - Sheep shot at Stevens no good~~
316 - View in Abilene, Tex -
7/8 - 1 now " " from
13000 - looking N. at Deming side N.M.
30, 31 - View of desert & mts. at Jarilla
23, 24 - Valley up the Rio Grande

~~x~~ B. B. Lessor

~~X~~ John Koenigsen

~~X~~ W.F. Seven.

~~Sens R.R. check to Miss Cavanaugh
from Laingardia H. Wex.
903 No. 15543.~~

144

Sens

inn

b

c